

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUBJECT INDEX</u>	9
<u>SUMMARY</u>	1-1
<u>AIR</u>	2-1
RESEARCH AND DEVELOPMENT	
Air Quality Research.	2-8
Scientific Assessment.	2-15
Monitoring Systems and Quality Assurance	2-16
Health Effects	2-18
Environmental Engineering and Technology	2-20
Environmental Processes and Effects.	2-22
Characterization, Transport and Fate	2-23
Stratospheric Modification	2-25
ABATEMENT AND CONTROL	
Air Quality and Stationary Source Planning and Standards	2-27
Emission Standards and Technology Assessment	2-29
National Pollutant Policies, Strategies and Rules.	2-31
State Program Guidelines and Air Standards Development	2-34
Mobile Source Air Pollution Control and Fuel Economy.	2-37
Emission Standards, Technical Assessment and Characterization.	2-39
Testing, Technical and Administrative Support.	2-40
Emissions and Fuel Economy Compliance.	2-42
State Programs Resource Assistance.	2-44
Control Agency Resource Supplementation (Section 105 Grants)	2-45
Training	2-48
Air Quality Management Implementation	2-49
Trends Monitoring and Progress Assessment	2-53
Ambient Air Quality Monitoring	2-55
Air Quality and Emissions Data Management and Analysis	2-57
ENFORCEMENT	
Stationary Source Enforcement	2-60
Mobile Source Enforcement	2-65
<u>WATER QUALITY</u>	3-1
RESEARCH AND DEVELOPMENT	
Water Quality Research.	3-10
Scientific Assessment.	3-14
Monitoring Systems and Quality Assurance	3-15
Health Effects	3-17

Table of Contents
(Continued)

	<u>Page</u>
Environmental Engineering and Technology	3-18
Environmental Processes and Effects.	3-19
Great Lakes.	3-20
ABATEMENT AND CONTROL	
Water Quality and Grants Program Management	3-22
Water Quality Management	3-24
Great Lakes Program.	3-26
Chesapeake Bay Program	3-28
Effluent Standards and Guidelines	3-31
Grants Assistance Programs.	3-34
Clean Lakes Program.	3-35
Control Agency Resource Supplementation (Section 106).	3-36
Water Quality Strategies Implementation	3-40
Wetlands Protection.	3-42
Ocean Disposal Permits	3-45
Environmental Emergency Response and Prevention.	3-47
Standards and Regulations.	3-48
Water Quality Monitoring and Analysis	3-51
Coastal Environment Management	3-53
Water Quality Monitoring and Analysis.	3-55
Municipal Source Control.	3-58
Municipal Waste Treatment Facility Construction.	3-60
Waste Treatment Operations and Maintenance	3-62
ENFORCEMENT	
Water Quality Enforcement	3-65
Water Quality Permit Issuance	3-69
 <u>DRINKING WATER</u>	 4-1
RESEARCH AND DEVELOPMENT	
Drinking Water Research	4-7
Scientific Assessment.	4-11
Monitoring Systems and Quality Assurance	4-12
Health Effects	4-13
Environmental Engineering and Technology	4-15
Environmental Processes and Effects.	4-16
ABATEMENT AND CONTROL	
Drinking Water Criteria, Standards and Guidelines	4-18
Criteria, Standards and Guidelines	4-20
Drinking Water Implementation.	4-22
Drinking Water State Program Resource Assistance.	4-25
Public Water Systems Supervision Program Grants.	4-26
Underground Injection Control Program Grants	4-28
Special Studies and Demonstrations	4-30
Drinking Water Management	4-32
Public Water Systems Supervision Program Assistance.	4-34
Underground Injection Control Program.	4-36

Table of Contents
(Continued)

	<u>Page</u>
Ground-Water Protection.	4-39
ENFORCEMENT	
Drinking Water Enforcement.	4-44
 <u>HAZARDOUS WASTE</u>	 5-1
RESEARCH AND DEVELOPMENT	
Hazardous Waste Research.	5-7
Scientific Assessment.	5-12
Monitoring Systems and Quality Assurance	5-13
Health Effects	5-15
Environmental Engineering and Technology	5-15
Environmental Processes and Effects.	5-17
Integrated Hazardous Waste Research.	5-18
ABATEMENT AND CONTROL	
Waste Management Regulations, Guidelines and Policies	5-20
Regulations, Guidelines and Policies - Hazardous Waste	5-22
Regulations, Guidelines and Policies - Air and Radiation	5-24
Regulations, Guidelines and Policies - Water	5-25
Regulations, Guidelines & Policies - Underground Storage Tanks	5-27
Financial Assistance.	5-30
Hazardous Waste Management Financial Assistance to States.	5-31
Underground Storage Tanks State Grants	5-33
Waste Management Strategies Implementation.	5-34
Hazardous Waste Management Regulatory Strategies Implementation.	5-35
Emergency Planning/Community Right-to-know - Title III.	5-37
ENFORCEMENT	
Hazardous Waste Enforcement	5-41
 <u>PESTICIDES</u>	 6-1
RESEARCH AND DEVELOPMENT	
Pesticides Research	6-7
Scientific Assessment.	6-13
Monitoring Systems and Quality Assurance	6-14
Health Effects	6-15
Environmental Engineering and Technology	6-16
Environmental Processes and Effects.	6-17
ABATEMENT AND CONTROL	
Registration, Special Registration and Tolerances	6-19
Registration, Special Registration and Tolerances.	6-21
Special Registration	6-23
Tolerances	6-24
Generic Chemical Review	6-25
Pesticides Program Implementation	6-30

Table of Contents
(Continued)

	<u>Page</u>
Pesticides Program Implementation.	6-31
Pesticides Program Implementation Grants	6-32
ENFORCEMENT	
Pesticides Enforcement.	6-34
Pesticides Enforcement	6-35
Pesticides Enforcement Grants.	6-36
 <u>RADIATION</u>	 7-1
RESEARCH AND DEVELOPMENT	
Radiation Research.	7-6
Monitoring Systems and Quality Assurance	7-9
Environmental Engineering and Technology	7-10
ABATEMENT AND CONTROL	
Radiation Criteria, Standards and Guidelines.	7-12
Radiation Program Implementation.	7-16
Radiation Environmental Impact Assessment	7-19
Radon Action Program.	7-22
Radon Action Program Implementation	7-26
 <u>INTERDISCIPLINARY</u>	 8-1
RESEARCH AND DEVELOPMENT	
Intermedia Programs	8-4
Scientific Assessment.	8-12
Technical Information and Liaison.	8-13
Quality Assurance Management	8-15
Exploratory Research Core Program.	8-15
Reduction of Uncertainties in Risk Assessment (RURA)	8-17
Human Exposure	8-18
Basic Ecological Research.	8-19
Capital Investments.	8-19
ABATEMENT AND CONTROL	
Environmental Review and Coordination	8-21
Agencywide Technology Transfer Staff.	8-24
Academic Training Grants.	8-27
ENFORCEMENT	
Enforcement Policy and Technical Support.	8-29
Enforcement Policy and Operations.	8-32
Criminal Investigations Program.	8-36
Technical Support - Office of Enforcement and Compliance Monitoring	8-38

Table of Contents
(Continued)

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	9-1
 <u>RESEARCH AND DEVELOPMENT</u>	
Toxics Substances Research.	9-7
Scientific Assessment.	9-14
Monitoring Systems and Quality Assurance	9-14
Health Effects	9-16
Environmental Engineering and Technology	9-17
Environmental Processes and Effects.	9-18
 <u>ABATEMENT AND CONTROL</u>	
Toxic Substances Financial Assistance	9-21
Asbestos-in-Schools Loans and Grants	9-23
Asbestos-in-Schools Program Administration	9-24
Asbestos-in-Schools Contractor and Inspector Certification	9-25
Toxic Substances Strategies	9-26
Chemical Testing	9-28
Existing Chemical Review	9-29
New Chemical Review.	9-32
Asbestos-in-Buildings.	9-33
Regional Toxics Program.	9-34
OPTS Title III.	9-36
 <u>ENFORCEMENT</u>	
Toxic Substances Enforcement.	9-40
Toxic Substances Enforcement	9-41
Toxic Substances Enforcement Grants.	9-43
OPTS Title III Enforcement.	9-44
<u>ENERGY</u>	10-1
 <u>RESEARCH AND DEVELOPMENT</u>	
Multi-Media Energy.	10-3
Acid Deposition.	10-8
Environmental Engineering and Technology	10-10
<u>MANAGEMENT AND SUPPORT</u>	11-1
 <u>PROGRAM MANAGEMENT</u>	
Program Management.	11-6
Program Management - Air and Radiation	11-9
Program Management - Water	11-10
Program Management - Enforcement and Compliance Monitoring	11-10
Program Management - External Affairs.	11-11
Program Management - Pesticides and Toxic Substances	11-12
Program Management - General Counsel	11-13
Program Management - Research and Development.	11-13
Program Management - Solid Waste and Emergency Response.	11-14

Table of Contents
(Continued)

	<u>Page</u>
AGENCY MANAGEMENT	
Office of the Administrator/Executive Offices	11-16
Immediate Office of the Administrator.	11-19
Office of Regional Operations.	11-20
Office of Executive Support.	11-20
Administrator's Representation Fund.	11-21
Office of International Activities	11-22
Office of Civil Rights	11-23
Science Advisory Board	11-24
Office of Administrative Law Judges.	11-24
Office of Small and Disadvantaged Business Utilization	11-25
Office of Inspector General	11-27
Office of Inspector General.	11-28
Office of General Counsel	11-31
General Counsel.	11-32
Office of External Affairs.	11-33
Office of Legislative Analysis	11-35
Office of Congressional Liaison.	11-36
Office of Public Affairs	11-36
Office of Community and Intergovernmental Relations.	11-37
Office of Federal Activities	11-38
Office of Policy, Planning and Evaluation	11-40
Program Management - Policy, Planning and Evaluation	11-42
Integrated Environmental Management Program.	11-43
Office of Policy Analysis.	11-44
Office of Standards and Regulations.	11-46
Office of Management Systems and Evaluation.	11-47
Pollution Prevention Program	11-49
Office of Administration and Resources Management	11-51
Program Management-Administration.	11-54
Financial Management - Headquarters.	11-55
Office of the Comptroller.	11-56
Contracts and Grants Management - Headquarters	11-57
Organization and Health Services	11-58
Facilities and Management Services	11-59
Information Systems and Services	11-60
Human Resources Management	11-61
REGIONAL MANAGEMENT	
Regional Management	11-63
Resource Management - Regions.	11-66
Financial Management - Regions	11-66
Personnel Management - Regions	11-67
Administrative Management - Regions.	11-68
Regional Management.	11-68
Regional Counsel	11-69
Planning, Evaluation and Analysis - Regions.	11-70

Table of Contents
(Continued)

	<u>Page</u>
SUPPORT COSTS	
Support Costs	11-72
Professional Training.	11-73
Nationwide Support Services.	11-74
Headquarters Support Services.	11-74
Regional Support Services.	11-75
Automated Data Processing Support Costs.	11-76
Lab Support - Research and Development	11-77
Lab Support - Air and Radiation.	11-77
Lab Support - Pesticides and Toxic Substances.	11-78
 <u>BUILDINGS AND FACILITIES</u>	
	12-1
Buildings and Facilities.	12-3
New Facilities	12-4
Repairs and Improvements	12-4
 <u>CONSTRUCTION GRANTS</u>	
	13-1
Construction Grants	13-3
 <u>SUPERFUND</u>	
	14-1
RESEARCH AND DEVELOPMENT	
Hazardous Substance Research.	14-8
Scientific Assessment.	14-16
Monitoring Systems and Quality Assurance	14-17
Health Effects	14-19
Environmental Engineering and Technology	14-20
Environmental Processes and Effects.	14-22
Exploratory Research	14-23
Technical Information and Liaison.	14-24
HAZARDOUS SUBSTANCE RESPONSE	
Hazardous Substance Response.	14-25
Hazardous Spill and Site Response.	14-26
Hazardous Substance Response - Support.	14-34
Hazardous Substance Response - Office of Water	14-35
Hazardous Substance Response - Office of Air and Radiation	14-37
Hazardous Substance Response - Interagency.	14-38
Department of Health and Human Services.	14-40
United States Coast Guard.	14-42
Department of Justice.	14-43
Federal Emergency Management Agency.	14-43
National Oceanic and Atmospheric Administration.	14-44
Department of the Interior	14-45
Occupational Safety and Health Administration.	14-46

Table of Contents
(Continued)

	<u>Page</u>
ENFORCEMENT	
Hazardous Substance Response - Enforcement.	14-47
Hazardous Substance Technical Support - Office of Enforcement and Compliance Monitoring.	14-49
Hazardous Substance Technical Enforcement.	14-51
Hazardous Substance Legal Enforcement.	14-53
Hazardous Substance Criminal Investigations.	14-56
MANAGEMENT AND SUPPORT	
Hazardous Substance Management and Support.	14-58
Hazardous Substance Financial Management - Headquarters.	14-64
Hazardous Substance Financial Management - Regions	14-65
Hazardous Substance Administrative Management - Headquarters	14-65
Hazardous Substance Administrative Management - Regions.	14-66
Hazardous Substance Contracts and Grants Management - Headquarters.	14-67
Hazardous Substance Contracts and Grants Management - Regions	14-68
Hazardous Substance Support Services - Headquarters.	14-68
Hazardous Substance Support Services - Regions	14-69
Hazardous Substance Computer Services.	14-69
Hazardous Substance Legal Services - Headquarters.	14-70
Hazardous Substance Legal Services - Regions	14-70
Hazardous Substance - Office of the Inspector General.	14-71
Hazardous Substance - Office of Policy, Planning and Evaluation.	14-72
Hazardous Substance - Office of the Comptroller.	14-74
Hazardous Substance - Office of External Affairs	14-74
Hazardous Substance - Executive Offices.	14-75
Hazardous Substance - Office of Research and Development - Lab Support.	14-76
 <u>LEAKING UNDERGROUND STORAGE TANKS</u>	 15-1
RESEARCH AND DEVELOPMENT	
LUST Technical Support.	15-4
Environmental Engineering and Technology	15-6
ABATEMENT AND CONTROL	
LUST Guidelines and Implementation.	15-8
ENFORCEMENT	
LUST Enforcement - Office of Enforcement and Compliance Monitoring.	15-11
MANAGEMENT AND SUPPORT	
Management and Support.	15-13
Policy and Analysis - Office of Policy, Planning and Evaluation	15-15
Administrative Management - Headquarters	15-16
Administrative Management - Regions.	15-16
Legal Services - Office of General Counsel	15-17
 <u>SPECIAL ANALYSES</u>	 16-1

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Subject Index by Media

	<u>Page</u>
<u>AIR</u>	
Acid Aerosols.	2-5,15,16,17,19, 23,34,35,36
Acid Deposition.	2-5
Air Quality Monitoring	2-16,17,18,55
Air Toxics	2-2,3,4,15,16,17,19, 23,29,30,35,39,40, 45,46,47,50,51,52, 58
Compliance Monitoring Inspections.	2-32
Consulting Services - Air.	2-6
Enforcement - Air.	2-2,3,4,7,32,41,45, 47,60,65
Fuel Economy	2-41,42,43
Global Climate Change.	2,5,25,26,34
Health Effects Institute - Air	2-19
Indoor Air	2-2,4,5,16,17,19,21, 31,32,33
Inspection and Maintenance Program - Air	2-3,40,45
In-use Emission Factors.	2-40
Mobile Source Pollutants	2-17,19,24
Motor Vehicle Emissions Laboratory	2-41
National Ambient Air Quality Standards (NAAQS)	2-2,3,15,16,17,19, 22,23,34,35,36,47, 48,50,51,56,57,58
National Crop Loss Assessment Network (NCLAN).	2-22
National Emission Standards for Hazardous Air Pollutants (NESHAPs)	2-3,4,7,17,29,30, 31,46,47,52
National Health and Nutrition Survey (NHANES-III).	2-20
New Source Performance Standards (NSPS).	2-17,21,23,29,30, 31,46,47
Ozone.	2-2,3,4,5,16,19,22, 23,29,30,31,32, 33,34,35,36,39, 40,45,46,47,50, 56,57,58,59
Particulate Matter (PM ₁₀).	2-3,4,15,19,23,29, 34,35,45,46,47, 50,51,55,56,57,58
Prevention of Significant Deterioration (PSD).	2-34,35,36,45,46,50, 51
Regional Modeling of Air Pollutants.	2-23,24
Regional Oxidant Model	2-23
Selective Enforcement Audits	2-3
State Grants - Air	2-44,45,46,47

Subject Index by Media
(Continued)

	<u>Page</u>
State Implementation Plans (SIPs)	2-2,3,17,21,23,30, 34,35,36,40,45, 46,47,50,51,56, 57,58,59
Stationary Source Enforcement.	2-60
Stratospheric Ozone Depletion.	2-2,4,25,26,31,33
Tampering and Fuel Switching	2-41

WATER QUALITY

Advanced Wastewater Treatment Reviews.	3-62
Aquatic Life Research.	3-16
Biomonitoring.	3-16,37,38,39,56, 57
Chesapeake Bay Program	3-4,19,28,29,30
Chesapeake Bay Toxics Reduction Strategy	3-28,29
Clean Lakes.	3-35,36
Coastal Environment Management	3-3,4,19,20,53,54, 55
Constructed Wetlands	3-3,18,19,20
Construction Grants Management	3-6,60,61,62,63,64
Corps of Engineers	3-42,43,44,45,46,60, 61,62
Consulting Services - Water Quality.	3-7
Effluent Guidelines.	3-15,32,33
Emergency Response - Water Quality	3-47,14-34,35
Enforcement - Water Quality.	3-7,37,38,39,66,67, 68
Great Lakes Program.	3-4,20,21,26,27,28
Great Lakes Replacement Research Vessel.	3-26,27
Gulf of Mexico Initiative.	3-3,53,54,55
Indian Tribes - Water Quality.	3-24,25,26,37,38,48, 49,50,60,61,62
International Pollution Control Agreements	3-4,21,26,27
Marine Outfalls - Section 301(h)	3-54,55
National Estuary Program	3-4,53,54,55
Near Coastal Waters.	3-3,19,20,53,54,55
New York Bight	3-4,45,46
Nonpoint Sources	3-4,5,24,25,27,28, 29,30,36
NPDES Permits.	3-5,7,37,38,54,66, 67,68,70,71,72
Ocean Disposal	3-2,19,20,45,46
Operations and Maintenance	3-62,63,64
Operator Training -Water Quality	3-63,64
Pretreatment	3-5,7,37,38,39,66, 67,68,70,71,72

Subject Index by Media
(Continued)

	<u>Page</u>
Sludge Management.	3-5,15,20,37,38,39, 48,49,50,63,70,71, 72
State Clean Water Strategies	3-3
State Grants - Water Quality	3-24,25,26,35,36,37, 38,39
State Revolving Funds.	3-6,60,61,62
Toxic Pollutant Controls	3-5,6,19,20,26,27, 28,29,37,38,39, 48,49,56,57,66, 67,68,70,71,72
Wastewater Treatment Compliance.	3-7,37,38,63,64,66, 67,68
Water Quality Permit Issuance.	3-5,37,38,39,70,71, 72
Wetlands (Section 404)	3-3,42,43,44

DRINKING WATER

Class V Wells.	4-2,4,23,24,28,29, 30,37,38,45
Drinking Water Implementation.	4-22,23,24
Enforcement - Drinking Water	4-45,46,47
Epidemiology	4-14,15
Ground-Water Activities.	4-2,4,5,13,16,40, 41,42,43
Ground-Water Protection Strategies	4-4,40,41,42,43
Ground-Water Research Activities	4-5,13,16
Health Advisories.	4-14,21
Health Effects - Drinking Water.	4-13,14,15
Indian Tribes -Drinking Water.	4-24,27,28,29,35, 36,37,38
National Primary Drinking Water Regulations.	4-2,13,20,23,27,35, 45
National Rural Water Association	4-30,31
National Survey of Pesticides.	4-20,21
Public Water Systems Supervision	4-3,22,26,27,31
Rural Community Assistance Programs.	4-30,31
Small Systems Engineering Research	4-15
Small Systems Initiative	4-22,30,31
State Grants - Drinking Water.	4-26,27,28,29,30,31
Underground Injection Control.	4-4,13,16,23,24,28, 36,37,38
Wellhead Protection.	4-2,16,40,41,42,43

Subject Index by Media
(Continued)

Page

HAZARDOUS WASTE

Air Emission Standards	5-24
Chemical Emergency Planning.	5-12, 38
Community Right-to-know.	5-12, 14, 16, 38
Compliance Inspections	5-43
Consulting Services - Hazardous Waste.	5-5
Corrective Action.	5-42
Domestic Sewage Study.	5-25
Enforcement - Hazardous Waste.	5-42
Financial Responsibility	5-24
Ground Water Monitoring.	5-14, 24
Hazardous Waste Research	5-11, 12, 14
Incineration	5-12, 15, 16, 24
Innovative/Alternatives Technologies	5-11, 16
Land Banning Activities.	5-24
Land Disposal.	5-11, 16, 24
Listing/Delisting.	5-18, 23
Medical Waste.	5-22
Mining Waste	5-4
Monitoring Methods	5-13, 43
Municipal Waste Incineration	5-12, 16, 22
Municipal Wastewater Lagoon Study.	5-27
Permitting	5-35
Policy and Guidance.	5-22
Pollution Prevention	5-5, 17
POTW Requirements - Hazardous Waste.	5-25
Quality Assurance - Hazardous Waste.	5-12, 14
Regulations Development.	5-22
Reports to Congress.	5-24
Risk Assessment - Hazardous Waste.	5-11, 12, 17
Solid Waste.	5-36
State Authorizations -Hazardous Waste.	5-36
State Grants - Hazardous Waste	5-31
Subtitle D Criteria.	5-36
Surface Impoundments	5-16
Title III - Hazardous Waste.	5-12, 14, 16, 38
Treatment Standards.	5-22
UIC Requirements (RCRA).	5-26
Underground Storage Tanks - Regulations and Guidelines	5-12, 27
Underground Storage Tanks Grants	5-33
Waste Characterization	5-2, 11, 13
Waste Minimization/Pollution Prevention.	5-3, 17

PESTICIDES

Biotechnology.	6-4, 22
Biotechnology Research	6-4, 13, 14, 15, 17

Subject Index by Media
(Continued)

	<u>Page</u>
Certification and Training	6-23,29,33
Consulting Services - Pesticides	6-4
Data Call-In	6-23,26,29
Disposal	6-2,4,16,22,26,29, 32,33
Emergency Exemptions	6-5,22,24
Endangered Species	6-2,3,22,26,31,33
Experimental Use Permit.	6-2,5,22
Pesticides Protection/Workers Exposed to Pesticides. . .	6-2,4,23,26,31,33, 35,37
Ground Water - Pesticides.	6-2,4,14,17,21,26, 31,33
National Survey of Pesticides in Drinking Water.	6-27
Nebraska and Colorado Enforcement Program.	6-33
Pesticide Program Implementation	6-23,30,33
Reregistration	6-2,3,26,28,37
Registration Fees.	6-21,23
Registration Standards	6-3,5,6,26,29
Risk Assessment - Pesticides	6-3,4,13,15
Special Review (RPAR).	6-3,5,27,29
State Grants - Pesticides.	6-31,32
Tolerances	6-2,3,5,19,24,26,28

RADIATION

Airborne Radionuclide Standards.	7-13
Environmental Radiation Ambient Monitoring System (ERAMS).	7-3,20,21
Nevada Nuclear Test Site	7-9,10
Radiological Emergency Response Plans.	7-17
Radon Mitigation Research.	7-4,10,11

INTERDISCIPLINARY

Agencywide Technology Transfer Staff	8-25
Case Referrals	8-33
Compliance Monitoring.	8-38
Criminal Investigations.	8-36
Ecological Trends.	8-19
Ecological Research Initiative	8-19
Ecological Risk Assessment	8-18
Enforcement - Interdisciplinary.	8-32
Enforcement Policy and Operations.	8-32
Environmental Review and Coordination.	8-22
Evidence Audits.	8-38

Subject Index by Media
(Continued)

	<u>Page</u>
Exploratory Research	8-15
Federal Agencies Compliance.	8-22
Human Exposure Research.	8-18
Human Health Risk Assessment - Interdisciplinary	8-17
Indians Programs - Interdisciplinary	8-22
Integrated Risk Information System (IRIS).	8-12
Academic Training Grants	8-28
Litigation	8-32
National Enforcement Investigation Center (NEIC)	8-38
NEPA Compliance Program.	8-22
Office of Enforcement and Compliance Monitoring.	8-32
Quality Assurance Interdisciplinary.	8-15
Reduction of Uncertainties in Risk Assessment (RURA)	8-17
Regulatory Support - Interdisciplinary	8-14
Risk Assessment Guidelines - Interdisciplinary	8-12
Scientific Equipment	8-19
Small Business Innovation Research	8-16
Technical Information.	8-14
Technology Transfer - ORD.	8-14
Distinguished Visiting Scientists Program.	8-16

TOXIC SUBSTANCES

Adipose Tissue Survey.	9-30,31
Asbestos Hazard Emergency Response Act (AHERA)	9-2,6,23-25,33-35, 41-43
Asbestos in Federal Buildings.	9-24
Asbestos in Public Buildings	9-3,6,23-25,33,34
Asbestos Regulations	9-23-25,30-34
Asbestos Research.	9-4,13,15,17,18,34
Asbestos School Hazard Abatement Act (ASHAA)	9-2,6,23-25,34
Asbestos Accreditation Programs	9-25,33,34
Biotechnology.	9-2,5,13,15,17,18, 19,32,33
Biotechnology Research	9-4
Comprehensive Assessment Information Rule (CAIR)	9-29-31
Consulting Services - Toxic Substances	9-4
Enforcement - Toxic Substances	9-4,40-43,45,46
Existing Chemical Review	9-2,3,5,29-31
Expedited New Chemical Follow-up	9-32,33
Interagency Testing Committee (ITC).	9-28,29
Lab/Data Integrity	9-6,41-43
Polychlorinated Biphenyls (PCBS).	9-2-6,29-31,35, 41-43
Premanufacture Notice Fees	9-32,33
Regional Toxics Program.	9-3,34,35
Risk Assessment - Toxic Substances	9-3,5,12,14,15, 29-31
SARA Section 110 Toxicological Profiles.	9-3,28

Subject Index by Media
(Continued)

	<u>Page</u>
Significant New Use Rule (SNUR)	9-32,33
Test Guidelines.	9-5,28,29
Test Rules	9-3,5,28,29,42
Title III Enforcement.	9-4,6,44-47
Title III Research Support	9-4,13,14,15,18
Title III Toxic Release Inventory.	9-2,3,6,28-31,37-39, 45-47

ENERGY

Acid Deposition.	10-8,9,10
Acid Rain.	10-2
Limestone Injection Multistage Burner (LIMB)	10-7,10,11
National Surface Water Survey.	10-9

MANAGEMENT AND SUPPORT

Audits and Investigations.	11-27
Automated Data Processing (ADP).	11-60,61,68,76,77
Fiscal Integrity	11-55,66
Global Climate Change.	11-22,44,45,46
Human Resources Management	11-61,62
International Activities	11-22
Legal Advice	11-31
Legislation/Congressional Liaison Activities	11-35,36
Maintenance and Repair Projects.	11-4
Management Systems Integrated.	11-56
Managing for Environmental Results	11-47,48,49
Office of General Counsel.	11-32
Regulatory Reform - OPPE	11-46,47
Support Services	11-73-78

CONSTRUCTION GRANTS

Active Projects - Construction Grants.	13-2,3,4
Administration's Phaseout - Construction Grants.	13-3
Obligation/Outlays - Construction Grants	13-3,4
Set-Asides - Construction Grants	13-2,3,4
State Revolving Funds - Construction GRants.	13-2,3

SUPERFUND

Alternative Technologies	14-4,15,18,21
Consulting Services - Superfund.	14-5

Subject Index by Media
(Continued)

	<u>Page</u>
Cost Recovery - Superfund.	14-51, 52, 53-56
Criminal Investigations - Superfund.	14-56
Emergency Response - Superfund	14-29
Enforcement - Superfund.	14-49
Environmental Response Team.	14-29
Health Research - Superfund.	14-19
Interagency - Superfund.	14-40
Management - Superfund	14-64
Office of Inspector General - Superfund.	14-71
Remedial Response.	14-26
Research and Development - Superfund	14-4, 8-24
SITE Program	14-4, 20, 21
Support Services - Superfund	14-35
University Research Centers.	14-15, 23, 24

LEAKING UNDERGROUND STORAGE TANK

Consulting Services - LUST	15-3
Cooperative Agreements - LUST.	15-9
Corrective Action - LUST	15-9
Cost Recovery - LUST	15-9
Enforcement - LUST	15-11, 12
Guidelines - LUST.	15-9
Management - LUST.	15-13, 15
Technical Support - LUST	15-5, 6

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Alphabetical Subject Index

	<u>Page</u>
A	
Academic Training Grants	8-28
Acid Aerosols.	2-5,15,16,17,19, 23,34,35,36
Acid Deposition - Air.	2-5
Acid Deposition - Energy	10-8,9,10
Acid Rain.	10-2
Active Projects - Construction Grants.	13-2,3,4
Adipose Tissue Survey.	9-30,31
Administration's Phaseout - Construction Grants.	13-3
Advanced Wastewater Treatment Reviews.	3-62
Agencywide Technology Transfer Staff	8-25
Air Emission Standards	5-24
Air Quality Monitoring	2-16,17,18,55
Air Toxics	2-2,3,4,15,16,17,19, 23,29,30,35,39,40, 45,46,47,50,51,52, 58
Airborne Radionuclide Standards.	7-13
Alternative Technologies	14-4,15,18,21
Aquatic Life Research.	3-16
Asbestos Accreditation Programs	9-25,33,34
Asbestos Hazard Emergency Response Act (AHERA)	9-2,6,23-25,33-35, 41-43
Asbestos in Federal Buildings.	9-24
Asbestos in Public Buildings	9-3,6,23-25,33,34
Asbestos Regulations	9-23-25,30-34
Asbestos Research.	9-4,13,15,17,18,34
Asbestos School Hazard Abatement Act (ASHAA)	9-2,6,23-25,34
Audits and Investigations.	11-27
Automated Data Processing (ADP).	11-60,61,68,76,77
B	
Biomonitoring.	3-16,37,38,39,56, 57
Biotechnology - Pesticides	6-4,22
Biotechnology - Toxic Substances	9-2,5,13,15,17,18, 19,32,33
Biotechnology Research - Toxic Substances.	9-4
Biotechnology Research - Pesticides.	6-4,13,14,15,17

Alphabetical Subject Index
(Continued)

Page

C

Case Referrals	8-33
Certification and Training	6-23, 29, 33
Chemical Emergency Planning.	5-12, 38
Chesapeake Bay Program	3-4, 19, 28, 29, 30
Chesapeake Bay Toxics Reduction Strategy	3-28, 29
Class V Wells.	4-2, 4, 23, 24, 28, 29, 30, 37, 38, 45
Clean Lakes.	3-35, 36
Coastal Environment Management	3-3, 4, 19, 20, 53, 54, 55
Community Right-to-know.	5-12, 14, 16, 38
Compliance Inspections	5-43
Compliance Monitoring.	8-38
Compliance Monitoring Inspections.	2-32
Comprehensive Assessment Information Rule (CAIR)	9-29-31
Constructed Wetlands	3-3, 18, 19, 20
Construction Grants Management	3-6, 60, 61, 62, 63, 64
Consulting Services - Air.	2-6
Consulting Services - Hazardous Waste.	5-5
Consulting Services - LUST	15-3
Consulting Services - Pesticides	6-4
Consulting Services - Superfund.	14-5
Consulting Services - Toxic Substances	9-4
Consulting Services - Water Quality.	3-7
Cooperative Agreements - LUST.	15-9
Corps of Engineers	3-42, 43, 44, 45, 46, 60, 61, 62
Corrective Action.	5-42
Corrective Action - LUST	15-9
Cost Recovery - LUST	15-9
Cost Recovery - Superfund.	14-51, 52, 53-56
Criminal Investigations.	8-36
Criminal Investigations - Superfund.	14-56

D

Data Call-In	6-23, 26, 29
Disposal	6-2, 4, 16, 22, 26, 29, 32, 33
Distinguished Visiting Scientists Program.	8-16
Domestic Sewage Study.	5-25
Drinking Water Implementation.	4-22, 23, 24

Alphabetical Subject Index
(Continued)

Page

E

Ecological Research Initiative	8-19
Ecological Risk Assessment	8-18
Ecological Trends.	8-19
Effluent Guidelines.	3-15,32,33
Emergency Exemptions	6-5,22,24
Emergency Response - Superfund	14-29
Emergency Response - Water Quality	3-47,14-34,35
Endangered Species	6-2,3,22,26,31,33
Enforcement - Air.	2-2,3,4,7,32,41,45, 47,60,65
Enforcement - Drinking Water	4-45,46,47
Enforcement - Hazardous Waste.	5-42
Enforcement - Interdisciplinary.	8-32
Enforcement - LUST	15-11,12
Enforcement - Superfund.	14-49
Enforcement - Toxic Substances	9-4,40-43,45,46
Enforcement - Water Quality.	3-7,37,38,39,66,67, 68
Enforcement Policy and Operations.	8-32
Environmental Radiation Ambient Monitoring System.	7-3,20,21
Environmental Response Team.	14-29
Environmental Review and Coordination.	8-22
Epidemiology	4-14,15
Evidence Audits.	8-38
Existing Chemical Review	9-2,3,5,29-31
Expedited New Chemical Follow-up	9-32,33
Experimental Use Permit.	6-2,5,22
Exploratory Research	8-15

F

Federal Agencies Compliance.	8-22
Financial Responsibility	5-24
Fiscal Integrity	11-55,66
Fuel Economy	2-41,42,43

G

Global Climate Change - Management and Support	11-22,44,45,46
Global Climate Change - Air.	2,5,25,26,34
Great Lakes Program.	3-4,20,21,26,27,28
Great Lakes Replacement Research Vessel.	3-26,27

Alphabetical Subject Index
(Continued)

	<u>Page</u>
Ground Water - Pesticides.	6-2,4,14,17,21,26, 31,33
Ground Water Monitoring.	5-14,24
Ground-Water Activities.	4-2,4,5,13,16,40, 41,42,43
Ground-Water Protection Strategies	4-4,40,41,42,43
Ground-Water Research Activities	4-5,13,16
Guidelines - LUST.	15-9
Gulf of Mexico Initiative.	3-3,53,54,55

H

Hazardous Waste Research	5-11,12,14
Health Advisories.	4-14,21
Health Effects - Drinking Water.	4-13,14,15
Health Effects Institute - Air	2-19
Health Research - Superfund.	14-19
Human Exposure Research.	8-18
Human Health Risk Assessment - Interdisciplinary	8-17
Human Resources Management	11-61,62

I

In-use Emission Factors.	2-40
Incineration	5-12,15,16,24
Indian Tribes - Water Quality.	3-24,25,26,37,38,48, 49,50,60,61,62
Indian Tribes -Drinking Water.	4-24,27,28,29,35, 36,37,38
Indians Programs - Interdisciplinary	8-22
Indoor Air	2-2,4,5,16,17,19,21, 31,32,33
Innovative/Alternatives Technologies	5-11,16
Inspection and Maintenance Program - Air	2-3,40,45
Integrated Risk Information System (IRIS).	8-12
Interagency - Superfund.	14-40
Interagency Testing Committee (ITC).	9-28,29
International Activities	11-22
International Pollution Control Agreements	3-4,21,26,27

Alphabetical Subject Index
(Continued)

Page

L

Lab/Data Integrity	9-6,41-43
Land Banning Activities.	5-24
Land Disposal.	5-11,16,24
Legal Advice	11-31
Legislation/Congressional Liaison Activities	11-35,36
Limestone Injection Multistage Burner (LIMB)	10-7,10,11
Listing/Delisting.	5-18,23
Litigation	8-32

M

Maintenance and Repair Projects.	11-4
Management - LUST.	15-13,15
Management - Superfund	14-64
Management Systems Integrated.	11-56
Managing for Environmental Results	11-47,48,49
Marine Outfalls - Section 301(h)	3-54,55
Medical Waste.	5-22
Mining Waste	5-4
Mobile Source Pollutants	2-17,19,24
Monitoring Methods	5-13,43
Motor Vehicle Emissions Laboratory	2-41
Municipal Waste Incineration	5-12,16,22
Municipal Wastewater Lagoon Study.	5-27

N

National Ambient Air Quality Standards (NAAQS)	2-2,3,15,16,17,19, 22,23,34,35,36,47, 48,50,51,56,57,58
National Crop Loss Assessment Network (NCLAN).	2-22
National Emission Standards for Hazardous Air Pollutants (NESHAPs)	2-3,4,7,17,29,30, 31,46,47,52
National Enforcement Investigation Center (NEIC)	8-38
National Estuary Program	3-4,53,54,55
National Health and Nutrition Survey (NHANES-III).	2-20
National Primary Drinking Water Regulations.	4-2,13,20,23,27,35, 45
National Rural Water Association	4-30,31
National Surface Water Survey.	10-9
National Survey of Pesticides.	4-20,21

Alphabetical Subject Index
(Continued)

	<u>Page</u>
National Survey of Pesticides in Drinking Water.	6-27
Near Coastal Waters.	3-3,19,20,53,54,55
Nebraska and Colorado Enforcement Program.	6-33
NEPA Compliance Program.	8-22
Nevada Nuclear Test Site	7-9,10
New Source Performance Standards (NSPS).	2-17,21,23,29,30, 31,46,47
New York Bight	3-4,45,46
Nonpoint Sources	3-4,5,24,25,27,28, 29,30,36
NPDES Permits.	3-5,7,37,38,54,66, 67,68,70,71,72
<u>Q</u>	
Obligation/Outlays - Construction Grants	13-3,4
Ocean Disposal	3-2,19,20,45,46
Office of Enforcement and Compliance Monitoring.	8-32
Office of General Counsel.	11-32
Office of Inspector General - Superfund.	14-71
Operations and Maintenance	3-62,63,64
Operator Training -Water Quality	3-63,64
Ozone.	2-2,3,4,5,16,19,22, 23,29,30,31,32, 33,34,35,36,39, 40,45,46,47,50, 56,57,58,59
<u>P</u>	
Particulate Matter (PM ₁₀).	2-3,4,15,19,23,29, 34,35,45,46,47, 50,51,55,56,57,58
Permitting	5-35
Pesticide Program Implementation	6-23,30,33
Pesticides Protection/Workers Exposed to Pesticides.	6-2,4,23,26,31,33, 35,37
Policy and Guidance.	5-22
Pollution Prevention	5-5,17
Polychlorinated Biphenyls (PCBS).	9-2-6,29-31,35, 41-43
POTW Requirements - Hazardous Waste.	5-25
Premanufacture Notice Fees	9-32,33

Alphabetical Subject Index
(Continued)

	<u>Page</u>
Pretreatment	3-5,7,37,38,39,66, 67,68,70,71,72
Prevention of Significant Deterioration (PSD).	2-34,35,36,45,46, 50,51
Public Water Systems Supervision	4-3,22,26,27,31

Q

Quality Assurance - Hazardous Waste.	5-12,14
Quality Assurance Interdisciplinary.	8-15

R

Radiological Emergency Response Plans.	7-17
Radon Mitigation Research.	7-4,10,11
Reduction of Uncertainties in Risk Assessment (RURA)	8-17
Regional Modeling of Air Pollutants.	2-23,24
Regional Oxidant Model	2-23
Regional Toxics Program.	9-3,34,35
Registration Fees.	6-21,23
Registration Standards	6-3,5,6,26,29
Regulations Development.	5-22
Regulatory Reform - OPPE	11-46,47
Regulatory Support - Interdisciplinary	8-14
Remedial Response.	14-26
Reports to Congress.	5-24
Reregistration	6-2,3,26,28,37
Research and Development - Superfund	14-4,8-24
Risk Assessment - Hazardous Waste.	5-11,12,17
Risk Assessment - Pesticides	6-3,4,13,15
Risk Assessment - Toxic Substances	9-3,5,12,14,15, 29-31
Risk Assessment Guidelines - Interdisciplinary	8-12
Rural Community Assistance Programs.	4-30,31

S

SARA Section 110 Toxicological Profiles.	9-3,28
Scientific Equipment	8-19
Selective Enforcement Audits	2-3
Set-Asides - Construction Grants	13-2,3,4
Significant New Use Rule (SNUR).	9-32,33
SITE Program	14-4,20,21

Alphabetical Subject Index
(Continued)

	<u>Page</u>
Sludge Management.	3-5,15,20,37,38,39, 48,49,50,63,70,71, 72
Small Business Innovation Research	8-16
Small Systems Engineering Research	4-15
Small Systems Initiative	4-22,30,31
Solid Waste.	5-36
Special Review (RPAR).	6-3,5,27,29
State Authorizations -Hazardous Waste.	5-36
State Clean Water Strategies	3-3
State Grants - Air	2-44,45,46,47
State Grants - Drinking Water.	4-26,27,28,29,30,31
State Grants - Hazardous Waste	5-31
State Grants - Pesticides.	6-31,32
State Grants - Water Quality	3-24,25,26,35,36,37, 38,39
State Implementation Plans (SIPs).	2-2,3,17,21,23,30, 34,35,36,40,45, 46,47,50,51,56, 57,58,59
State Revolving Funds.	3-6,60,61,62
State Revolving Funds - Construction GRants.	13-2,3
Stationary Source Enforcement.	2-60
Stratospheric Ozone Depletion.	2-2,4,25,26,31,33
Subtitle D Criteria.	5-36
Support Services - Management and Support.	11-73-78
Support Services - Superfund	14-35
Surface Impoundments	5-16

I

Tampering and Fuel Switching	2-41
Technical Information.	8-14
Technical Support - LUST	15-5,6
Technology Transfer - ORD.	8-14
Test Guidelines.	9-5,28,29
Test Rules	9-3,5,28,29,42
Title III - Hazardous Waste.	5-12,14,16,38
Title III Enforcement.	9-4,6,44-47
Title III Research Support	9-4,13,14,15,18
Title III Toxic Release Inventory.	9-2,3,6,28-31,37-39, 45-47
Tolerances	6-2,3,5,19,24,26,28

Alphabetical Subject Index
(Continued)

	<u>Page</u>
Toxic Pollutant Controls	3-5,6,19,20,26,27, 28,29,37,38,39, 48,49,56,57,66, 67,68,70,71,72
Treatment Standards.	5-22

U

UIC Requirements (RCRA).	5-26
Underground Injection Control.	4-4,13,16,23,24,28, 36,37,38
Underground Storage Tanks - Regulations and Guidelines	5-12,27
Underground Storage Tanks Grants	5-33
University Research Centers.	14-15,23,24

W

Waste Characterization	5-2,11,13
Waste Minimization/Pollution Prevention.	5-3,17
Wastewater Treatment Compliance.	3-7,37,38,63,64,66, 67,68
Water Quality Permit Issuance.	3-5,37,38,39,70,71, 72
Wellhead Protection.	4-2,16,40,41,42,43
Wetlands (Section 404)	3-3,42,43,44



1. Summary

ENVIRONMENTAL PROTECTION AGENCY

Justification of Appropriation Estimates for the Committee on Appropriations

Fiscal Year 1990

BUDGET SUMMARY

The President's request for the Environmental Protection Agency's 1990 Budget totals \$4,883,000,000 supported by 15,130 total workyears. These resources include \$1,833,000,000 and 12,004 workyears for the Agency's operating programs; \$1,750,000,000 and 3,035 workyears for the Superfund program; \$100,000,000 and 91 workyears for the Leaking Underground Storage Tank (LUST) program; and \$1,200,000,000 for the Construction Grants program. When compared to the Agency's 1989 current estimate, the President's request represents an overall increase of \$312,941,000 and 410 total workyears to Superfund, LUST, and the operating programs. The request for Construction Grants represents a decrease of \$750,000,000 from the 1989 level, which is in keeping with the President's \$12 billion phaseout of the program. The following chart provides a summary of budget authority for EPA's eight appropriation accounts.

<u>EPA's Budget Authority</u> (dollars in thousands)				
	1989 <u>Enacted</u>	1989 <u>Current Estimate</u>	1990 <u>President's Request</u>	Increase + Decrease - <u>1989 vs 1990</u>
Salaries & Expenses.....	\$804,000.0	\$804,000.0	\$868,583.0	+\$64,583.0
Office of the Inspt.General...			21,417.0 ^a	+21,417.0
Research & Development.....	202,500.0	202,500.0	235,000.0	+32,500.0
Abatement, Control & Compl.	715,625.0	715,625.0	700,000.0	-15,625.0
Buildings & Facilities.....	<u>8,000.0</u>	<u>16,515.0</u>	<u>8,000.0</u>	<u>-8,515.0</u>
OPERATING PROGRAMS				
Subtotal.....	\$1,730,125.0	\$1,738,640.0	\$1,833,000.0	+\$94,360.0
Construction Grants.....	\$1,950,000.0	\$1,950,000.0	\$1,200,000.0	-\$750,000.0
Hazardous Substance Superfund....	\$1,425,000.0	\$1,579,093.0	\$1,750,000.0	+\$170,907.0
Office of the Inspt.General.			(\$10,317.0) ^a	(+\$10,317.0)
Leaking Under-ground Storage Tanks (LUST)..<	<u>\$50,000.0</u>	<u>\$52,326.0</u>	<u>\$100,000.0</u>	<u>+\$47,67.0</u>
AGENCY TOTAL..<	<u>\$5,155,125.0</u>	<u>\$5,320,059.0</u>	<u>\$4,883,000.0</u>	<u>-\$437,059.0</u>

- ^a Office of the Inspector General is a single appropriation made up of a request for \$21,417,000 from the General Fund and \$10,317,000 from the Hazardous Substance Trust Fund. The portion from the Trust Fund will be used to support Superfund activities of the Office of the Inspector General.

The 1990 budget was developed within the deficit targets established by the Gramm-Rudman-Hollings law. Despite the reality of limited Federal resources, increases have been provided for Superfund, LUST, and the operating programs, as shown in the above chart, to reaffirm the President's commitment to provide the resources necessary to protect human health and the environment.

APPROPRIATIONS HIGHLIGHTS

The following briefly describes the 1990 request, the purpose, and the major changes from the Agency's 1989 estimates for each of EPA's eight appropriations. Taken together, the first five appropriations (Salaries and Expenses; Office of the Inspector General; Abatement, Control and Compliance; Research and Development; and Buildings and Facilities) constitute the operating programs portion of the Agency's budget. It should be noted that only a portion of the Inspector General account is included in the operating programs. The remainder of the account is for Superfund activities. In addition, in the 1990 request it is proposed that we fund repair and improvement projects under \$75,000 from each of the operating program accounts except the Office of the Inspector General.

SALARIES AND EXPENSES

EPA's 1990 request of \$868,583,000 represents an increase of \$64,583,000 (8%) over the 1989 current estimate for Salaries and Expenses. This appropriation finances salaries and related costs associated with administering the operating programs within the Agency. It incorporates all costs exclusive of grant programs and program-specific contractual agreements.

OFFICE OF THE INSPECTOR GENERAL

The Office of the Inspector General account is being established as a separate appropriation in accordance with the requirements of the Inspector General Act Amendments of 1988. Prior to 1990 expenses for the Office of the Inspector General were included in the Salaries and Expenses appropriation and Superfund. As established, this account is funded by direct appropriations of \$21,417,000 from the General Fund for the operating programs portion and an appropriation of \$10,317,000 from the Hazardous Substance Trust Fund to carry out the Superfund portion of its activities. With this appropriation the Office of the Inspector General will be able to continue its audits and investigations relating to EPA programs and operations, thereby promoting economy, efficiency, and effectiveness throughout the Agency; prevent and detect fraud and abuse and keep the Administrator and Congress advised of problem areas and related corrective actions as well as review EPA regulations and legislation.

RESEARCH AND DEVELOPMENT

For 1990 EPA is requesting \$235,000,000 for the Research and Development appropriation, an increase of \$32,500,000 (16%) over the 1989 current estimate. This appropriation finances research grants, contracts and agreements with

universities and private industry, as well as in-house research, to produce the scientific knowledge and tools necessary for regulating, preventing and abating pollution. The Agency plans to direct major increases in 1990 toward enhancing global climate change research, strengthening the Agency's long-term research capabilities, rebuilding the scientific infrastructure of the Agency, and supporting media program needs.

ABATEMENT, CONTROL AND COMPLIANCE

The Agency is requesting \$700,000,000 for the Abatement, Control and compliance appropriation, a decrease of \$15,625,000 (2%) below the 1989 current estimate. This appropriation finances contracts, grants, and cooperative agreements for pollution abatement, control and compliance activities. The 1990 request includes a reduction of \$31,350,000 for pesticides disposal and \$47,500,000 for the asbestos-in-schools grants and loan program. The decrease for pesticides disposal reflects a reduction in the need for storage and disposal funding for the remaining stocks of cancelled and suspended pesticides due to the significant progress that will be achieved using the 1989 funding. The request for asbestos-in-schools is reduced because previous Federal funding has already greatly reduced the problem, and many States have initiated active asbestos management or contractor accreditation programs for schools and should be able to continue these activities.

BUILDINGS AND FACILITIES

The Agency is requesting \$8,000,000 for the Buildings and Facilities appropriation. This represents an \$8,515,000 (52%) decrease from the 1989 current estimate which includes unobligated funds from previous years. This appropriation finances the construction of new facilities and the repair, improvement, alteration, and purchase of fixed equipment for facilities which the Agency currently leases or owns. The requested level will permit the agency to continue to ensure healthy and safe working conditions.

CONSTRUCTION GRANTS

This appropriation finances grants to local public agencies for construction of municipal wastewater treatment facilities, thereby assisting States and localities in attaining established water quality standards. The President's request of \$1,200,000,000 for the Construction Grants appropriation in 1990 represents a decrease of \$750,000,000 (38%) below the 1989 current estimate, consistent with the President's \$12 billion eight year phaseout plan. The plan was designed to fund construction needed to meet municipal treatment requirements as well as to provide sufficient time for the transition to state self-sufficiency. A key component of this plan is the capitalization of State Revolving Funds. Of the funds requested for 1990, \$400,000,000 would be for construction grants and \$800,000,000 would go toward State Revolving Funds (SRF).

HAZARDOUS SUBSTANCE SUPERFUND

This appropriation finances responses at uncontrolled hazardous waste sites and spills of hazardous substances. EPA's 1990 request of \$1,750,000,000 for this program represents an increase of \$160,590,000 (10%) over the 1989 current estimate. The request includes \$10,317,000 from the Hazardous Substance Trust Fund to the Office of the Inspector General appropriation to support Superfund

activities. The Agency is requesting 3,035 total workyears to support this request. The increase reflects the Agency's intention to sustain the momentum regained after the reauthorization of the Superfund program in 1986. The request provides for an increased number of site designs and constructions in 1990; increased enforcement actions, and oversight of responsible party remedial response actions; growth in the number of interagency agreements with other Federal agencies for remedial response; and expanded research to improve cleanup technology.

LEAKING UNDERGROUND STORAGE TANKS (LUST)

The Agency is requesting \$100,000,000 supported by 91 total workyears in 1990, an increase of \$47,674,000 (91%) over the 1989 current estimate. This appropriation established a response program for the prevention and remediation of releases from leaking underground petroleum storage tanks. The requested increase will support increased funding of State Cooperative Agreements, the primary mechanism for implementing response actions and cleanups under this program.

CHLOROFLUOROCARBONS (CFCs) REVENUES

The current regulation implementing the "Montreal Protocol" will be revised to charge market value for the rights to produce chlorofluorocarbons (CFCs) and related substances that deplete the ozone layer. The charges for these rights, whether by auction or permit fee, are expected to generate proceeds in 1990 of \$400,000,000. The revenues resulting from these charges would accrue to the Treasury for the benefit of the general public.

TRANSFER AUTHORITY

The Agency is requesting appropriation transfer authority. The authority would be exclusive of the Trust Funds and Construction Grants appropriations and would be limited to 7 per centum. The 7 percent limit would apply to both the losing and receiving appropriations. This authority will provide the Agency the flexibility it needs to target resources to meet new and emerging environmental priorities and Congressional mandates. In an Agency as complex as EPA, situations frequently arise where changes must be made to priorities established almost 18 months in advance or to methods needed to achieve priorities. The ability to meet the requirements of the Agency's programs will be greatly enhanced with this authority.

ENVIRONMENTAL PROTECTION AGENCY

Summary of Budget Authority,
Obligations, Outlays, and Workyears
By Appropriation
(dollars in thousands)

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
	-----	-----	-----	-----
Salaries and Expenses				

Budget Authority.....	\$ 765,000.0	\$ 804,000.0	\$ 804,000.0	\$ 868,582.6
Obligations.....	761,437.4	804,000.0	804,000.0	868,582.6
Outlays.....	762,502.0	805,024.0	805,024.0	839,991.0
Permanent Workyears.....	10,683.2	11,325.6	11,332.6	11,699.2
Total Workyears.....	11,482.9	11,740.0	11,743.3	11,699.2
 Office of Inspector General (Salaries and Expenses)				

Budget Authority.....	\$ 0.0	\$ 0.0	\$ 0.0	\$ 21,417.4
Obligations.....	0.0	0.0	0.0	21,417.4
Outlays.....	0.0	0.0	0.0	18,419.0
Permanent Workyears	0.0	0.0	0.0	242.8
Total Workyears	0.0	0.0	0.0	242.8
 Research and Development				

Budget Authority.....	\$ 186,350.0	\$ 202,500.0	\$ 202,500.0	\$ 235,000.0
Obligations.....	186,109.4	200,535.4	200,535.4	234,311.0
Outlays.....	203,608.0	198,873.0	198,873.0	221,404.0
 Abatement, Control, and Compliance				

Budget Authority.....	\$ 606,192.3	\$ 715,625.0	\$ 715,625.0	\$ 700,000.0
Obligations.....	611,357.1	712,913.6	712,913.6	700,258.4
Outlays.....	597,721.2	655,374.0	655,374.0	721,344.0
 Buildings and Facilities				

Budget Authority.....	\$ 23,500.0	\$ 8,000.0	\$ 16,514.8 * \$	8,000.0
Obligations.....	18,247.1	16,185.0	16,185.0	8,163.0
Outlays.....	9,247.0	12,929.0	12,929.0	18,623.0

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
	-----	-----	-----	-----
Scientific Activities				
Overseas				

Obligations.....	\$ 579.6	\$ 0.0	\$ 0.0	\$ 0.0
Outlays.....	42.0	213.0	213.0	326.0

SUBTOTAL,				
OPERATING PROGRAMS				

Budget Authority.....	\$1,581,042.3	\$1,730,125.0	\$1,738,639.8 *	\$1,833,000.0
Obligations.....	1,577,730.6	1,733,634.0	1,733,634.0	1,832,732.4
Outlays.....	1,573,120.2	1,672,413.0	1,672,413.0	1,820,107.0
Permanent Workyears.....	10,683.2	11,325.6	11,332.6	11,942.0
Total Workyears.....	11,482.9	11,740.0	11,743.3	11,942.0
Hazardous Substance				
Superfund				

Budget Authority.....	\$1,128,000.0	\$1,425,000.0	\$1,579,093.2 *	\$1,739,683.1
Obligations.....	1,497,370.3	1,579,093.2	1,579,093.2	1,739,683.1
Outlays.....	828,912.0	1,150,000.0	1,150,000.0	1,372,524.0
Permanent Workyears.....	2,451.9	2,706.7	2,701.7	2,467.2
Total Workyears.....	2,642.2	2,830.0	2,824.7	2,967.2
Office of Inspector General				
(Superfund)				

Budget Authority.....	\$ 0.0	\$ 0.0	\$ 0.0	\$ 10,316.9
Obligations.....	0.0	0.0	0.0	10,316.9
Outlays.....	0.0	0.0	0.0	2,476.0
Permanent Workyears.....	0.0	0.0	0.0	67.8
Total Workyears.....	0.0	0.0	0.0	67.8
LUST Trust Fund				

Budget Authority.....	\$ 14,400.0	\$ 50,000.0	\$ 52,325.9 *	\$ 100,000.0
Obligations.....	41,749.7	52,325.9	52,325.9	100,000.0
Outlays.....	13,838.0	31,820.0	31,820.0	43,260.0
Permanent Workyears.....	65.5	82.6	82.6	91.3
Total Workyears.....	72.9	90.0	90.0	91.3

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
	-----	-----	-----	-----
Construction Grants				
Budget Authority.....	\$2,304,000.0	\$1,950,000.0	\$1,950,000.0	\$1,200,000.0
Obligations.....	2,793,098.0	2,527,000.0	2,527,000.0	1,443,000.0
Outlays.....	2,514,461.0	2,390,000.0	2,390,000.0	2,350,000.0
Operations, Research and Facilities				
Obligations.....	\$ 16.0	\$ 50.0	\$ 50.0	\$ 50.0
Outlays.....	(88.0)	250.0	250.0	175.0
Tolerances Revolving Fund				
Obligations.....	\$ 933.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0
Outlays.....	(196.0)	(200.0)	(200.0)	(200.0)
Misc. Contrib. Funds				
Obligations.....	\$ 15.0	\$ 10.0	\$ 10.0	\$ 10.0
Outlays.....	7.0	40.0	40.0	28.0
Reregistration & Expedited Processing Revolving Fund				
Obligations.....	\$ 0.0	\$ 5,000.0	\$ 5,000.0	\$ 14,000.0
Outlays.....	0.0	(9,000.0)	(9,000.0)	0.0
Reimbursements - S&E				
Obligations.....	\$ 20,444.1	\$ 25,000.0	\$ 25,000.0	\$ 26,583.0
Permanent Workyears.....	62.6	62.0	62.0	62.0
Total Workyears.....	65.2	62.0	62.0	62.0
Reimbursements-Superfund				
Obligations.....	\$ 13,548.4	\$ 30,000.0	\$ 30,000.0	\$ 30,000.0
Reimbursements-R&D				
Obligations.....	\$ 0.0	\$ 0.0	\$ 5,000.0	\$ 5,000.0

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
	-----	-----	-----	-----
Reimbursements-AC&C				
Obligations.....	\$ 0.0	\$ 0.0	\$ 5,000.0	\$ 5,000.0
	-----	-----	-----	-----
TOTAL, EPA				
Budget Authority.....	\$5,027,442.3	\$5,155,125.0	\$5,320,058.9 *	\$4,883,000.0
Obligations.....	5,944,905.1	5,953,113.1	5,963,113.1	5,207,375.4
Outlays.....	4,930,054.2	5,235,323.0	5,235,323.0	5,588,370.0
Permanent Workyears.....	13,263.2	14,176.9	14,178.9	14,630.3
Total Workyears.....	14,263.2	14,722.0	14,720.0	15,130.3
	=====	=====	=====	=====

* Includes planned prior year funds.

Summary of Budget Authority,
Obligations, Outlays, and Workyears
By Media
(dollars in thousands)

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
	-----	-----	-----	-----
Air				

Budget Authority.....	\$ 247,351.9	\$ 269,578.8	\$ 268,431.7	\$ 295,464.2
Obligations.....	248,422.3	266,020.1	264,890.0	291,841.0
Outlays.....	252,725.3	254,008.4	252,920.9	281,987.2
Permanent Workyears.....	1,628.2	1,700.7	1,692.0	1,753.9
Total Workyears.....	1,717.4	1,741.1	1,731.9	1,753.9
Water Quality				

Budget Authority.....	\$ 260,545.6	\$ 288,615.7	\$ 286,771.1	\$ 307,902.3
Obligations.....	257,146.0	290,561.6	288,437.0	310,783.0
Outlays.....	268,124.2	281,887.6	280,095.0	303,722.7
Permanent Workyears.....	1,988.4	2,141.4	2,125.8	2,234.0
Total Workyears.....	2,151.1	2,236.2	2,219.5	2,234.0
Drinking Water				

Budget Authority.....	\$ 107,444.2	\$ 108,337.1	\$ 107,802.9	\$ 118,954.6
Obligations.....	106,990.5	107,563.9	107,037.0	118,244.0
Outlays.....	105,357.4	103,886.0	103,369.2	112,690.6
Permanent Workyears.....	687.6	720.3	716.5	766.7
Total Workyears.....	746.8	745.5	741.1	766.7
Hazardous Waste				

Budget Authority.....	\$ 258,952.2	\$ 267,059.4	\$ 264,772.8	\$ 273,703.3
Obligations.....	256,438.9	268,862.3	266,616.0	277,372.0
Outlays.....	258,469.6	250,186.5	248,053.2	270,319.6
Permanent Workyears.....	1,368.4	1,441.7	1,427.7	1,489.0
Total Workyears.....	1,460.9	1,505.0	1,491.0	1,489.0

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
Pesticides				
Budget Authority.....	\$ 81,934.8	\$ 124,278.3	\$ 123,347.4	\$ 110,224.6
Obligations.....	82,339.1	122,675.5	121,754.0	109,404.6
Outlays.....	77,918.8	107,707.7	106,905.9	107,138.7
Permanent Workyears.....	770.8	824.0	816.0	853.3
Total Workyears.....	820.1	831.0	822.8	853.3
Radiation				
Budget Authority.....	\$ 19,709.5	\$ 23,082.0	\$ 23,025.0	\$ 31,822.9
Obligations.....	19,664.0	22,846.9	22,794.0	31,448.0
Outlays.....	16,266.9	20,192.7	20,142.3	30,660.8
Permanent Workyears.....	158.3	198.5	196.8	200.2
Total Workyears.....	170.9	200.9	199.2	200.2
Noise				
Budget Authority.....	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
Obligations.....	0.0	0.0	0.0	0.0
Outlays.....	1.9	50.0	50.0	50.0
Interdisciplinary				
Budget Authority.....	\$ 61,323.6	\$ 73,966.8	\$ 76,894.0	\$ 118,494.4
Obligations.....	61,057.0	73,355.8	76,248.0	117,620.0
Outlays.....	62,066.7	69,494.1	72,246.7	113,974.5
Permanent Workyears.....	581.4	633.7	656.1	740.0
Total Workyears.....	630.2	657.6	679.9	740.0
Toxic Substances				
Budget Authority.....	\$ 129,755.6	\$ 144,319.6	\$ 143,219.1	\$ 107,225.2
Obligations.....	138,219.5	143,051.5	142,187.2	107,090.0
Outlays.....	130,925.1	143,954.6	142,854.6	113,155.2
Permanent Workyears.....	822.8	864.7	861.8	880.6
Total Workyears.....	863.1	875.0	871.6	880.6

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
	-----	-----	-----	-----
Energy				
Budget Authority.....	\$ 55,303.5	\$ 54,968.7	\$ 54,903.2	\$ 38,207.7
Obligations.....	55,254.5	54,592.8	54,528.0	37,766.0
Outlays.....	57,328.2	59,667.1	59,595.6	52,016.0
Permanent Workyears.....	72.0	69.7	68.6	52.4
Total Workyears.....	77.0	69.7	68.6	52.4
Management and Support				
Budget Authority.....	\$ 335,221.4	\$ 367,918.6	\$ 372,957.8	\$ 423,000.8 *
Obligations.....	333,951.7	367,918.6	372,957.8	423,000.8
Outlays.....	334,689.1	368,449.3	373,250.6	415,768.7
Permanent Workyears.....	2,605.3	2,730.9	2,771.3	2,971.9
Total Workyears.....	2,845.4	2,878.0	2,917.7	2,971.9
Buildings and Facilities				
Budget Authority.....	\$ 23,500.0	\$ 8,000.0	\$ 16,514.8 **	\$ 8,000.0
Obligations.....	18,247.1	16,185.0	16,185.0	8,163.0
Outlays.....	9,247.0	12,929.0	12,929.0	18,623.0
SUBTOTAL, OPERATING PROGRAMS				
Budget Authority.....	\$1,581,042.3	\$1,730,125.0	\$1,738,639.8 **	\$1,833,000.0 *
Obligations.....	1,577,730.6	1,733,634.0	1,733,634.0	1,832,732.4
Outlays.....	1,573,120.2	1,672,413.0	1,672,413.0	1,820,107.0
Permanent Workyears.....	10,683.2	11,325.6	11,332.6	11,942.0
Total Workyears.....	11,482.9	11,740.0	11,743.3	11,942.0
Hazardous Substance Superfund				
Budget Authority.....	\$1,128,000.0	\$1,425,000.0	\$1,579,093.2 **	\$1,750,000.0 ***
Obligations.....	1,497,370.3	1,579,093.2	1,579,093.2	1,750,000.0
Outlays.....	828,912.0	1,150,000.0	1,150,000.0	1,375,000.0
Permanent Workyears.....	2,451.9	2,706.7	2,701.7	2,535.0
Total Workyears.....	2,642.2	2,830.0	2,824.7	3,035.0

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990
LUST Trust Fund				
Budget Authority.....	\$ 14,400.0	\$ 50,000.0	\$ 52,325.9 **	\$ 100,000.0
Obligations.....	41,749.7	52,325.9	52,325.9	100,000.0
Outlays.....	13,838.0	31,820.0	31,820.0	43,260.0
Permanent Workyears.....	65.5	82.6	82.6	91.3
Total Workyears.....	72.9	90.0	90.0	91.3
Construction Grants				
Budget Authority.....	\$2,304,000.0	\$1,950,000.0	\$1,950,000.0	\$1,200,000.0
Obligations.....	2,793,098.0	2,527,000.0	2,527,000.0	1,443,000.0
Outlays.....	2,514,461.0	2,390,000.0	2,390,000.0	2,350,000.0
Operations, Research and Facilities				
Obligations.....	\$ 16.0	\$ 50.0	\$ 50.0	\$ 50.0
Outlays.....	-88.0	250.0	250.0	175.0
Tolerances Revolving Fund				
Obligations.....	\$ 933.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0
Outlays.....	(196.0)	(200.0)	(200.0)	(200.0)
Misc. Contrib. Funds				
Obligations.....	\$ 15.0	\$ 10.0	\$ 10.0	\$ 10.0
Outlays.....	7.0	40.0	40.0	28.0
Reregistration & Expedited Processing Revolving Fund				
Obligations.....	\$ 0.0	\$ 5,000.0	\$ 5,000.0	\$ 14,000.0
Outlays.....	0.0	(9,000.0)	(9,000.0)	0.0
Reimbursements - S&E				
Obligations.....	\$ 20,444.1	\$ 25,000.0	\$ 25,000.0	\$ 26,583.0
Permanent Workyears.....	62.6	62.0	62.0	62.0
Total Workyears.....	65.2	62.0	62.0	62.0

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990

Reimbursements-Superfund				

Obligations.....	\$ 13,548.4	\$ 30,000.0	\$ 30,000.0	\$ 30,000.0
Reimbursements-R&D				

Obligations.....	\$ 0.0	\$ 0.0	\$ 5,000.0	\$ 5,000.0
Reimbursements-AC&C				

Obligations.....	\$ 0.0	\$ 0.0	\$ 5,000.0	\$ 5,000.0

TOTAL, EPA				

Budget Authority.....	\$5,027,442.3	\$5,155,125.0	\$5,320,058.9 **	\$4,883,000.0
Obligations.....	5,944,905.1	5,953,113.1	5,963,113.1	5,207,375.4
Outlays.....	4,930,054.2	5,235,323.0	5,235,323.0	5,588,370.0
Permanent Workyears.....	13,263.2	14,176.9	14,178.9	14,630.3
Total Workyears.....	14,263.2	14,722.0	14,720.0	15,130.3
	=====	=====	=====	=====

* Includes \$21,417,400 in budget authority and obligations and \$18,419,000 in outlays from the Office of Inspector General appropriation.

** Includes planned prior year funds.

*** Includes \$10,316,900 in budget authority and obligations and \$2,467,000 in outlays from the Office of Inspector General appropriation.



2. Air

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>AIR</u>	2-1
RESEARCH AND DEVELOPMENT	
Air Quality Research.	2-8
Scientific Assessment.	2-15
Monitoring Systems and Quality Assurance	2-16
Health Effects	2-18
Environmental Engineering and Technology	2-20
Environmental Processes and Effects.	2-22
Characterization, Transport and Fate	2-23
Stratospheric Modification	2-25
ABATEMENT AND CONTROL	
Air Quality and Stationary Source Planning and Standards	2-27
Emission Standards and Technology Assessment	2-29
National Pollutant Policies, Strategies and Rules.	2-31
State Program Guidelines and Air Standards Development	2-34
Mobile Source Air Pollution Control and Fuel Economy.	2-37
Emission Standards, Technical Assessment and Characterization.	2-39
Testing, Technical and Administrative Support.	2-40
Emissions and Fuel Economy Compliance.	2-42
State Programs Resource Assistance.	2-44
Control Agency Resource Supplementation (Section 105 Grants)	2-45
Training	2-48
Air Quality Management Implementation	2-49
Trends Monitoring and Progress Assessment	2-53
Ambient Air Quality Monitoring	2-55
Air Quality and Emissions Data Management and Analysis	2-57
ENFORCEMENT	
Stationary Source Enforcement	2-60
Mobile Source Enforcement	2-65



AIR

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$87,931.5	\$90,256.2	\$89,952.6	\$94,565.3	\$4,612.7
Abatement Control and Compliance	\$120,255.0	\$135,944.3	\$135,291.2	\$143,619.7	\$8,328.5
Research & Development	\$40,235.8	\$43,378.3	\$43,187.9	\$57,279.2	\$14,091.3
TOTAL, Air	\$248,422.3	\$269,578.8	\$268,431.7	\$295,464.2	\$27,032.5

PERMANENT WORKYEARS	1,628.2	1,700.7	1,692.0	1,753.9	61.9
TOTAL WORKYEARS	1,717.4	1,741.1	1,731.9	1,753.9	22.0
OUTLAYS	\$252,725.3	\$254,008.4	\$252,920.9	\$281,987.2	\$29,066.3
AUTHORIZATION LEVELS	Authorization for the Clean Air Act expired September 30, 1981. Reauthorization is pending.				



OVERVIEW AND STRATEGY

The Clean Air Act authorizes a nationwide program of air quality planning, regulation, enforcement, and research to control air pollution. EPA's strategy for implementing the nationwide program consists of five major goals: (1) achieve National Ambient Air Quality Standards (NAAQSs) to protect public health; (2) reduce the risk of exposure to air toxics; (3) increase the capacity and improve the effectiveness of state and local air quality agencies; (4) determine the policy alternatives and strategy options available to address stratospheric ozone depletion, global warming, indoor air pollution and acid deposition; and (5) conduct research to provide a strong scientific and technical basis for regulatory programs.

Achieve NAAQSs Nationwide

Establishing NAAQSs at levels that protect public health and prevent other adverse effects has been the keystone of the national air quality program. The NAAQSs are revised based on the results of regular assessments of the most current scientific data on health and other effects of various air pollutants. In 1990 EPA plans to promulgate revised or reaffirmed NAAQSs for sulfur dioxide and propose revised or reaffirmed NAAQSs for lead.

To achieve NAAQSs, EPA helps states complete and enforce State Implementation Plans (SIPs), as required by the Clean Air Act. Although air quality has generally improved as a result of SIP measures, many SIPs have proven inadequate for meeting NAAQSs by statutory deadlines.

The NAAQSs for ozone and carbon monoxide have proven to be the most difficult standards to meet. Currently, 100 million people live in areas that failed to meet the standards. About 70 areas did not meet the ozone standards and about 60 areas failed to attain the carbon monoxide standards by December, 1987, the target date specified in the Clean Air Act. To help the post-1987 nonattainment areas meet the ozone and carbon monoxide NAAQSs, EPA proposed a new national policy in November, 1987. The final policy, scheduled for completion in 1989, will provide the framework for continued efforts towards NAAQSs attainment. Significant resources will be required in 1990 and later years to help EPA and states cover costs associated with implementing the policy.

In 1990 EPA will provide guidance and development assistance to states to help them correct and expand SIPs which have proven inadequate to meet the ozone and carbon monoxide NAAQSs. EPA will begin developing documents which identify appropriate levels of control technology. EPA and states will also carry out a comprehensive enforcement program aimed at achieving continuous compliance by stationary sources, primarily those emitting volatile organic compounds (VOCs), which are ozone precursors.

Another element of the strategy for attaining ozone and carbon monoxide NAAQSS provides for continued reduction in emissions from in-use motor vehicles. About half of the additional ozone precursor reduction required by the proposed policy will come from continued enforcement of existing and new mobile source standards. To ensure that vehicles meet emission standards throughout their useful life, EPA will maintain a comprehensive Federal compliance program. The program includes preproduction certification of emission control systems; selective enforcement audits at manufacturers' facilities; and recalls of insufficiently controlled vehicles. In 1990 EPA will promulgate revised light-duty truck hydrocarbon emission standards. In addition, EPA will commit additional resources to enforce emission standards for trucks and buses; enforce vehicle fuel volatility requirements; demonstrate alternative, less polluting fuels; and increase testing for mobile source emission factors.

In 1990 EPA will also continue to work with states to establish and maintain effective vehicle inspection/maintenance and anti-tampering programs. By the end of 1989, 66 inspection and maintenance programs and 45 anti-tampering programs are expected to be in operation. An additional nine new anti-tampering programs are anticipated in 1990, bringing the total to 54.

EPA will also help states develop SIPs for attaining the revised NAAQSS for PM₁₀ and will review SIPs submitted by states as required under the Clean Air Act. Approximately 150 areas, having a total population of 60 million people, will not meet, or have the potential for not meeting, the revised PM₁₀ standard. In 1990 the PM₁₀ program will focus on developing and reviewing SIPs, particularly in the Group II nonattainment area where monitoring data show PM₁₀ violations. In previously identified Group I nonattainment areas, States will continue developing SIPs to be ready for EPA review in 1990-1991. In some cases, states will be developing measures for nontraditional sources. Efforts will also be underway to develop policy for areas that cannot meet standards in the statutory timeframe. EPA will also publish final rules that establish PM₁₀ increment to prevent significant deterioration of air quality.

Reduce Risk of Exposure to Air Toxics

EPA's strategy for addressing air toxics consists of three elements: expanded Federal regulation, increased state capabilities, and improved multi-source, multi-pollutant approaches to control. In 1990 EPA will regulate toxic emissions from point sources and nontraditional sources and help states improve their air toxic programs.

As part of the Federal air toxics program, EPA will list and regulate toxic air pollutants under section 112 of the Clean Air Act. Decisions for Federal regulatory actions will be made for five to 10 pollutant/source categories.

In 1990 EPA will be developing National Emission Standards for Hazardous Air Pollutants (NESHAPs) for 12 hazardous pollutants. In addition, EPA will promulgate two (NESHAPs) and propose five others. EPA will also regulate toxic emissions by developing New Source Performance Standards for municipal landfills and municipal waste combustors. EPA will continue to help states build their ability to be responsible implementing NESHAPs. The Agency will also increase emphasis on carrying out the revised strategy for the asbestos

demolition and renovation NESHAPs.

As part of the program for addressing nontraditional sources of air toxics, EPA will work towards promulgating regulations for air emissions from seven types of hazardous waste treatment, storage, and disposal facilities.

Since EPA has found that vehicle emissions and fuels are major components of toxic air pollutants, part of the nontraditional source program will increase efforts to control toxic emissions from motor vehicles and vehicle fuels. To help ensure that manufacturers of heavy-duty diesel vehicles meet more stringent particulate standards, EPA will continue assessing technologies and promulgating standards for controlling the quality of diesel fuels. The Agency will also carry out a new heavy-duty engine enforcement program.

In 1990 EPA will continue to help states strengthen their air toxics programs by implementing and revising their multi-year plans. The plans will address NESHAPs implementation, control of high-risk point sources not covered by NESHAPs, multi-pollutant/multi-source urban problems, and general program improvements. In addition, EPA will provide states with information on specific hazardous compounds to help them assess health risks, control needs, and appropriate levels of control technology.

Strengthen State and Local Programs

EPA will continue to devote substantial effort to increasing the capacity of state and local air pollution control agencies and to leveraging the effects of its own resources. The Agency will support state and local air pollution control programs by providing direct program assistance and training and by facilitating information exchange. EPA will share information through the Control Technology Center and clearinghouses that provide information on air toxics, emission factors, control technology, and risk. In 1990 EPA will establish a PM₁₀ modeling center that will provide state and local governments with data bases, model documentation, and model applications for traditional and nontraditional source categories.

EPA will also continue to carry out the National Air Audit System (NAAS). The NAAS identifies obstacles which limit the effectiveness of state and local control agencies and helps EPA define more efficient and influential national programs. The NAAS will again cover five program areas in 1990: air quality planning; new source review; compliance assurance; air monitoring; and vehicle inspection/maintenance and anti-tampering. The results of the national audit will be used to identify both the problems of individual state and local agencies and more generic national problems.

Address Growing Problems: Stratospheric Ozone Depletion; Global Warming; Indoor Air quality; and Acid Deposition

Stratospheric Ozone Depletion. Because the Clean Air Act gives the Administrator of EPA authority to protect the stratosphere, EPA is responsible for Federal efforts aimed at confronting ozone depletion, climate change related to stratospheric alterations, and other effects and emissions caused by stratospheric change. Under the Montreal Protocol on Substances that Deplete the Ozone Layer, signed by the United States and 31 other nations, EPA will implement and enforce domestic rules, support international implementation of

rules and policies under the protocol, carry out risk and economic assessments to monitor progress under the protocol, and share information on technology development and alternative chemicals which minimize ozone depletion.

In 1988 EPA issued a final rule requiring controls for producing and consuming chlorofluorocarbons (CFCs) and halons and an Advance Notice of Proposed Rulemaking that described possible additional or revised rules. In 1989 EPA is focusing on implementing and enforcing the domestic rule and conducting analyses of possible further action. In 1990 EPA will continue implementing and enforcing the domestic rule and will participate in a series of assessments in support of the Montreal protocol.

Indoor Air Quality. Research completed by EPA and others indicates that health risks are caused by total exposure to air pollutants and not just from ambient exposures. Elevated levels of certain indoor air pollutants may pose a substantial threat to human health. In 1990 EPA will continue to provide policy direction to the indoor air quality research program; will disseminate information to broad segments of the public on risks and ways to mitigate indoor air quality problems; and will coordinate its activities with other EPA programs, other Federal agencies, states, and the private sector. In 1990 EPA will examine further the extent of the "sick building syndrome" and will initiate the establishment of an Indoor Air Quality Technical and Non-technical Clearinghouse.

Acid Deposition. In 1990 EPA will continue an acid deposition program that includes accelerated research and analyses of policy and implementation issues. EPA's Office of Research and Development (ORD) will continue to develop the scientific and technical information required to respond to policy issues. In 1990 the Office of Air and Radiation Program will analyze legislation, assess policy implications of research results, prepare guidance for states, and provide advice and assistance to the Department of Energy Clean Coal Technology Program.

Continue Research to Support Regulatory Programs

ORD will provide health and ecological effects data, monitoring methods and support, air pollutant transport models, assessments of emission reduction technologies, and quality assurance to help meet the regulatory and public information needs of the air program. In 1990 ORD will provide new resources to substantially increase global climate change research; extend the regional oxidant model (ROM) to areas outside of the Northeast; and initiate research on acid aerosol measurement methodologies.

The Agency is proposing a major initiative for global climate change research as part of a coordinated, multi-institutional effort to address the likelihood and impact of global climate change. The program will focus primarily on the regional effects of climate change.

The ROM will be applied to ozone non-attainment areas beyond the Northeast, including the Southeast. Also, research begun in 1989 on the health effects of acid aerosols will be supplemented by monitoring methods development and modeling research. There is currently no low cost, acceptable means for measuring acid aerosols. Work will focus on determining the temporal and spatial distributions of acid aerosols in the atmosphere and understanding the

atmospheric processes associated with their formation and removal.

Consulting Services

OAR funded a limited amount of consulting services in 1988. Section 117 of the Clean Air Act requires consultation with appropriate advisory committees prior to publishing any NSPS or NESHAP. The National Air Pollution Control Techniques Advisory Committee is comprised of members from industry, environmental groups, academia, and state/local governments. The committee typically meets three or four times per year to review the technical basis of Federal emission standards.

A few small management service contracts were awarded in 1988. The purpose of these contracts was to provide specialized expertise in environmental economics needed to assess the economic impacts and benefits of various NSPS, NESHAP, and NAAQS regulatory actions. The assessment of economic impacts and benefits is required by Executive Order 12291.



AIR

<u>PROGRAM ACTIVITIES</u>	<u>ACTUAL 1988</u>	<u>CURRENT ESTIMATE 1989</u>	<u>ESTIMATE 1990</u>	<u>INCREASE (+) DECREASE (-) 1990 vs 1989</u>
<u>National Ambient Air Quality Standards</u>				
Number of Pollutants				
Covered (Cumulative)	6	6	6	--
Proposals*	1	0	1	+1
Promulgations*.....	0	0	1	+1
<u>New Source Performance Standards</u>				
Source Categories				
Covered (Cumulative).....	59	66	72	+6
Proposals**.....	0	2	4	+2
Promulgations**.....	3	9	6	-3
<u>National Emission Standards for Hazardous Air Pollutants</u>				
Number of Source Categories				
Covered (Cumulative).....	31	32	33	+1
Number of Pollutants				
Covered (Cumulative).....	6	6	7	+1
Proposals**.....	3	1	5	+4
Promulgations**.....	0	1	2	+1
<u>Enforcement Actions - Stationary Sources</u>				
Inspections.....	2,019	1,868	1,868	--
Notices of Violations.....	287	300	300	--
Administrative Orders.....	224	225	225	--
Civil Litigation.....	73	86	86	--
Criminal Litigation.....	20	10	10	--
<u>Enforcement Actions - Mobile Sources</u>				
State and Local Tampering/ Fuel Switching Programs				
(Cumulative).....	42	45	54	+9
Assembly Line Testing				
Test Orders.....	21	15	15	0
Recall Investigations.....	23	23	23	0
Notices of Violations				
Tampering/Fuel Switching	367	400	400	0

* Revisions or reaffirmations

** New source categories and revisions. NESHAPs include air toxic standards developed under other regulatory authorities.

NOTE: All outputs are incremental except as indicated.



Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>AIR</u>	2-1
RESEARCH AND DEVELOPMENT	
Air Quality Research.	2-8
Scientific Assessment.	2-15
Monitoring Systems and Quality Assurance	2-16
Health Effects	2-18
Environmental Engineering and Technology	2-20
Environmental Processes and Effects.	2-22
Characterization, Transport and Fate	2-23
Stratospheric Modification	2-25



AIR
Air Quality Research

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Scientific Assessment -
Air

Salaries & Expenses	\$3,042.8	\$3,131.6	\$2,967.6	\$2,995.1	\$27.5
Research & Development	\$2,147.0	\$2,391.3	\$2,217.6	\$2,216.9	-\$.7
TOTAL	\$5,189.8	\$5,522.9	\$5,185.2	\$5,212.0	\$26.8

Monitoring Systems And
Quality Assurance - Air

Salaries & Expenses	\$6,304.6	\$6,581.3	\$6,478.7	\$6,344.4	-\$134.3
Research & Development	\$7,984.5	\$6,697.1	\$6,688.8	\$6,345.0	-\$343.8
TOTAL	\$14,289.1	\$13,278.4	\$13,167.5	\$12,689.4	-\$478.1

Health Effects - Air

Salaries & Expenses	\$7,803.0	\$7,661.8	\$7,481.0	\$6,794.8	-\$686.2
Research & Development	\$13,563.7	\$13,604.0	\$13,604.0	\$18,374.0	\$4,770.0
TOTAL	\$21,366.7	\$21,265.8	\$21,085.0	\$25,168.8	\$4,083.8

Environmental
Engineering And
Technology - Air

Salaries & Expenses	\$3,508.4	\$3,416.8	\$3,391.4	\$4,028.0	\$636.6
Research & Development	\$3,931.8	\$3,141.2	\$3,136.9	\$3,102.7	-\$34.2
TOTAL	\$7,440.2	\$6,558.0	\$6,528.3	\$7,130.7	\$602.4

Environmental Processes
And Effects - Air

Salaries & Expenses	\$696.7	\$778.8	\$911.5	\$953.0	\$41.5
Research & Development	\$1,384.3	\$1,301.0	\$1,301.0	\$1,301.0	
TOTAL	\$2,081.0	\$2,079.8	\$2,212.5	\$2,254.0	\$41.5

AIR
Air Quality Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Characterization, Transport And Fate - Air					
Salaries & Expenses	\$3,538.9	\$3,865.7	\$3,742.9	\$3,713.4	-\$29.5
Research & Development	\$7,335.9	\$7,336.7	\$7,332.6	\$8,332.6	\$1,000.0
TOTAL	\$10,874.8	\$11,202.4	\$11,075.5	\$12,046.0	\$970.5
Stratospheric Modification Program					
Salaries & Expenses	\$353.4	\$868.4	\$924.4	\$2,053.4	\$1,129.0
Research & Development	\$3,888.6	\$8,907.0	\$8,907.0	\$17,607.0	\$8,700.0
TOTAL	\$4,242.0	\$9,775.4	\$9,831.4	\$19,660.4	\$9,829.0
TOTAL:					
Salaries & Expenses	\$25,247.8	\$26,304.4	\$25,897.5	\$26,882.1	\$984.6
Research & Development	\$40,235.8	\$43,378.3	\$43,187.9	\$57,279.2	\$14,091.3
Air Quality Research TOTAL	\$65,483.6	\$69,682.7	\$69,085.4	\$84,161.3	\$15,075.9

PERMANENT WORKYEARS

Scientific Assessment - Air	45.0	51.2	49.2	49.1	-.1
Monitoring Systems And Quality Assurance - Air	112.1	113.0	112.2	102.0	-10.2
Health Effects - Air	107.4	120.1	117.3	115.0	-2.3
Environmental Engineering And Technology - Air	59.9	57.8	57.6	57.5	-.1
Environmental Processes And Effects - Air	9.5	13.8	13.8	13.8	

AIR
Air Quality Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Characterization, Transport And Fate - Air	56.6	57.2	56.7	56.5	-.2
Stratospheric Modification Program	3.8	14.0	15.0	30.9	15.9
TOTAL PERMANENT WORKYEARS	394.3	427.1	421.8	424.8	3.0
TOTAL WORKYEARS					

Scientific Assessment - Air	49.2	51.2	49.2	49.1	-.1
Monitoring Systems And Quality Assurance - Air	113.3	113.0	112.2	102.0	-10.2
Health Effects - Air	116.0	120.1	117.3	115.0	-2.3
Environmental Engineering And Technology - Air	60.6	57.8	57.6	57.5	-.1
Environmental Processes And Effects - Air	10.5	13.8	13.8	13.8	
Characterization, Transport And Fate - Air	59.6	57.2	56.7	56.5	-.2
Stratospheric Modification Program	4.5	14.0	15.0	30.9	15.9
TOTAL WORKYEARS	413.7	427.1	421.8	424.8	3.0



AIR

Air Quality Research

Principal Outputs by Objective

Objective 1: Provide Scientific Support to Develop and Review Primary and Secondary National Ambient Air Quality Standards (NAAQS).

- 1990: o Prepare External Review Drafts (ERD) for the nitrogen oxides and carbon monoxide Air Quality Criteria Documents (AQCD) (Scientific Assessment)
- o Report on aerosol sources for the Eastern U.S. (Characterization)
- o Report on response of the human respiratory tract to acute exposure to acid aerosols (Health)

- 1989: o Complete supplement to the AQCD for ozone and other photochemical oxidants (Scientific Assessment)
- o Report on the effects of prolonged exposure (greater than six hours) to ozone at or below current one-hour NAAQS (Health)
- o Publication of a comprehensive research plan to determine the effects of tropospheric ozone on U.S. forests (Environmental Processes)

- 1988: o Report on pulmonary function response of normal subjects and individuals with sensitive or diseased airways to ozone and nitrogen dioxide (Health)
- o Final report on the National Crop Loss Assessment Network (NCLAN) (Environmental Processes)

Objective 2: Provide Scientific Support to Develop New Source Performance Standards (NSPS) and State Implementation Plans (SIPs).

- 1990: o Report on the application of conventional particulate control technology in major areas of concern (Engineering)
- o Evaluation of the Regional Oxidant Model (ROM) using analytical test data and new air quality data (Characterization)
- o Report on area volatile organic compound (VOC) sources and control options to support the Agency's post-1987 ozone non-attainment strategy (Engineering)

- 1989: o Report on the development of an advanced process which utilizes calcium silicate sorbents (ADVACATE) to control acid gases from combustion sources (Engineering)
- o Report on recommended modifications to the Complex Terrain Dispersion Model (Characterization)

- 1988: o Report, recommendations, and supporting evidence on chemical processes for use in regional ozone modeling (Characterization)

Objective 3: Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants (HAPs).

- 1990: o Report on retrofit technology for existing woodstoves (Engineering)
- o Report on Boise field study of woodstove emissions (Engineering)
- o Assessment of the contribution of wood burning and automobile emissions to the mutagenicity and carcinogenicity of airborne pollutants (Health)

- 1989: o Assessment of the comparative mutagenicity and carcinogenicity of combustion source emissions (Health)
- o Report on identities of HAPs produced in the atmosphere from ubiquitous innocuous pollutants (Characterization)
- o Final report on the TEAM studies of VOCs in Los Angeles, Baltimore, and New Jersey (Monitoring)

- 1988: o Journal article on the dosimetry of VOCs (Health)
- o Journal article assessing HAPs resulting from light-duty vehicle emissions (Characterization)
- o Final report on TEAM study of indoor air in 10 buildings (Monitoring)

Objective 4: Provide Scientific Support for the Mobile Source Regulatory Program.

- 1990: o Journal article characterizing tailpipe, evaporative and refueling emissions from gasoline fueled automobiles (Characterization)
- o Assessment of the contribution of mobile source emissions to the genotoxicity of ambient urban aerosol mixtures (Health)

- 1989: o Report on population exposure to mobile source pollutants for 1988 (Monitoring)
- o Journal article evaluating emissions from diesels equipped with advanced emission control technology (Characterization)
- o Report on the effects of atmospheric transformation on the mutagenicity of gaseous gasoline emissions (Health)

- 1988: o Article on the composition and rate of emissions during refueling with data on the impact of control technologies (Characterization)
- o Report on procedures for apportionment of observed ambient pollutant concentrations to mobile sources (Characterization)

Objective 5: Provide Scientific Data on the Sources, Exposures, and Health Effects Associated with Indoor Air Pollutants and Evaluate Control Strategies.

- 1990: o Report assessing the potential carcinogenicity of combustion emissions from unvented indoor kerosene heaters (HEALTH)

- 1989: o Report on human clinical studies assessing the effects of exposure to volatile organic compounds found indoors (Health)
- o Develop personal computer model for evaluating indoor air quality control options (Engineering)
- o Report on the Effectiveness of Air Cleaners for IAQ Control (Eng.)

- 1988: o Report on indoor air monitoring methods development (Monitoring)
 o Report on the use of biomarkers for evaluating exposure to environmental tobacco smoke in children (Health)

Objective 6: Provide Scientific Data to Determine the Effects of Stratospheric Ozone Depletion and Evaluate Control Strategies

- 1990: o Report on the effects of UV-B radiation on rice yield (Strat Mod)
 o Development of a predictive UV-B dose response model for commercially important fish (Strat Mod)
 o Establish domestic monitoring network for ground-level UV-B irradiation (Strat Mod)
- 1989: o Biennial Congressional Report on ozone depletion (Strat Mod)
 o Report on the most important fisheries resources likely to be affected by UV-B radiation, both in terms of resource significance and sensitivity (Strat Mod)
- 1988: o Report on nitrous oxide emissions from combustion sources (Strat Mod)
 o Report on UV-B radiation effects on agro-ecosystems (Strat Mod)

Objective 7: Provide Scientific Data to Determine the Effects of Global Warming and Evaluate Control Strategies

- 1990: o Report on surface water responses to altered temperature and precipitation regimes for the contiguous United States (Strat Mod)
 o Evaluate feedbacks from ecosystem and land-use changes, including changes in tropical forests, to changes in climate (Strat Mod)
 o Descriptions of emissions from agricultural and unmanaged ecosystems (Strat Mod)
- 1989: o Interim Assessment of the response of terrestrial ecosystems to changing climactic conditions, with the first estimates of landscape sensitivity (Strat Mod)
 o Evaluation of air quality changes due to changes in tropospheric chemical reactions sensitive to climate change (Strat Mod)
- 1988: o Completed case studies in several regions of the U.S. for inclusion in the Congressional Report on the potential effects of climate change (Strat Mod)
 o Draft five-year research plan for stratospheric ozone research on emissions, atmospheric alterations and ecological effects (Strat Mod)

Objective 8: Provide Scientific Data and Support to the National Health and Nutrition Examination Survey (NHANES-III)

- 1990: o Status report on NHANES-III cooperative research (Health)
- 1989: o Status report on NHANES-III cooperative research (Health)
- 1988: o Initiate cooperative research project under NHANES-III (Health)

AIR

Air Quality Research

Budget Request

The Agency requests a total of \$84,161,300 supported by 424.8 total workyears for 1990 an increase of \$15,075,900 and 3.0 total workyears from 1989. Of the request, \$26,882,100 will be for the Salaries and Expenses appropriation and \$57,279,200 will be for the Research and Development appropriation, increases of \$984,600 and \$14,091,300 respectively.

Program Objectives

This research program provides the scientific and technical support necessary for the Agency to carry out its regulatory and information transfer responsibilities under the Clean Air Act. The following objectives support these efforts:

Objective 1. Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. This research program provides the scientific data needed to issue and revise national standards for emissions of criteria air pollutants.

Objective 2. Provide Scientific Support to Develop NSPS and SIPs. This research supports issuance and revision of New Source Performance Standards and State Implementation Plans through development of models and monitoring techniques for air pollutants and engineering studies of control technologies.

Objective 3. Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants (HAPs). Under this objective, EPA conducts research to identify and control emissions of air pollutants from a variety of sources that are hazardous to human health but are not already regulated as criteria air pollutants.

Objective 4. Provide Scientific Support for the Mobile Source Regulatory Program. This research evaluates emissions, exposure patterns, and health effects of mobile source pollutants.

Objective 5. Provide Scientific Data on the Sources, Exposures, and Health Effects Associated with Indoor Air Pollutants and Evaluate Control Strategies. Research conducted under this objective supports the Agency's efforts to inform the public about hazards associated with indoor air pollutants and to develop methods to control emissions from major sources.

Objective 6. Provide Scientific Data to Determine the Effects of Stratospheric Ozone Depletion and Evaluate Control Strategies. This research program provides data on the effects of stratospheric ozone depletion and the resulting increases in harmful (UV-B) radiation on humans, plants, and ecosystems.

Objective 7. Provide Scientific Data to Determine the Effects of Global Warming and Evaluate Control Strategies. This objective provides the research needed to determine the regional consequences of global climate change and to improve emissions estimates of greenhouse gases, specifically methane and nitrous oxide.

Objective 8. Provide Scientific Support to the National Health and Nutrition Examination Survey (NHANES-III). Activities in support of this objective will provide national baseline data on the health status of a statistically representative sample of Americans. The data will be useful for testing hypotheses about the health effects associated with some environmental pollutants.

Objective 9. Provide Support for the Health Effects Institute (HEI). HEI conducts research on the health effects of motor vehicle emissions and is jointly funded by the Agency and private industry.

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$5,212,000 supported by 49.1 total workyears for this program, of which \$2,995,100 will be for the Salaries and Expenses appropriation and \$2,216,900 will be for the Research and Development appropriation. This represents an increase of \$27,500 in the Salaries and Expenses appropriation, a decrease of \$700 in the Research and Development appropriation, and a decrease of 0.1 total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs, the decrease in the Research and Development appropriation reflects a slight reduction in support for NAAQS assessments, and the workyear reduction reflects a consolidation of resources for the Regional Scientists Program within the Interdisciplinary media.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. Recent health studies and other new scientific data will be reviewed for several air pollutants to support the Agency's statutory mandate to revise National Ambient Air Quality Standards (NAAQS) every five years. These data will be evaluated in Air Quality Criteria Documents (AQCD) which are the primary source of information used by EPA regulatory decision makers in setting or revising NAAQS. In 1990, a draft of the nitrogen oxides and carbon monoxide AQCDs will be issued for comment and data will be collected to support revision of the particulate matter AQCD. In addition, data on the health effects of acid aerosols will continue to be evaluated.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. In order to provide the Office of Air and Radiation (OAR) with the information needed to make regulatory decisions on specific hazardous air pollutants, final comprehensive Health Assessment Documents (HADs) will be completed for one chemical and External Review Drafts (ERDS) will be prepared for one to three chemicals. Tier 1 screening documents, the initial review of pertinent health effects data on potential HAPs, will also be completed for two to four chemicals. Other activities will include: assessments of health data for potential HAPs by source category; technical assistance to Regions and

states on air toxics issues through the Air Risk Information Support Center (Air RISC); and work on inhalation reference doses for air toxics.

Provide Scientific Data on the Sources, Exposures, and Health Effects Associated with Indoor Air Pollutants and Evaluate Control Strategies. In support of the Agency's Indoor Air Quality Implementation Plan, risk assessments for indoor air pollutants will be conducted. These assessments, which are based on the results of laboratory studies and available literature, will be disseminated by EPA to other Federal agencies, state and local governments, and the general public.

1989 Program

In 1989, the Agency is allocating a total of \$5,185,200 supported by 49.2 total workyears for this program, of which \$2,967,600 is from the Salaries and Expenses appropriation and \$2,217,600 is from the Research and Development appropriation. Support for NAAQS assessments in 1989 includes: work on revising the AQCDs for particulate matter, nitrogen oxides, and carbon monoxide; completion of a supplement to the ozone AQCD; and preparation of a final paper on the health effects of acid aerosols. Air toxics work includes the first assessment of health data on a source-category basis (hospital incinerators). Finally, indoor air health risk assessments are being initiated to inform other Federal agencies, state and local governments, and the general public about the potential risks of exposure to indoor air pollutants.

1988 Accomplishments

In 1988, the Agency obligated a total of \$5,189,800 supported by 49.2 total workyears for this program, of which \$3,042,800 was from the Salaries and Expenses appropriation and \$2,147,000 was from the Research and Development appropriation. Work on revising the nitrogen oxides and carbon monoxide AQCDs was conducted and an issue paper on the health effects of acid aerosols was prepared for external review. Two HADs, two ERDs, and three Tier 1 screening documents for HAPs identified for study by the Office of Air and Radiation (OAR) were also completed.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$12,689,400 supported by 102.0 total workyears for this program, of which \$6,344,400 will be for the Salaries and Expenses appropriation and \$6,345,000 will be for the Research and Development appropriation. This represents a decrease of \$134,300 in the Salaries and Expenses appropriation, a decrease of \$343,800 in the Research and Development appropriation, and a decrease of 10.2 total workyears. The reduction in resources reflects the net transfer of the TEAM (Total Exposure Assessment Methodology) program to the Interdisciplinary media and an increase to initiate research on measurement techniques to characterize ambient acid aerosol levels.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. As state and local officials implement the particulate matter NAAQS, improved methods are needed to refine measurements of particulates in the

ambient air. Erroneous measurement techniques may lead to unnecessarily costly control strategies or, conversely, failure to address potential health hazards. As a result, the 1990 research program will evaluate cost-effective methodologies for measuring particulates. This effort includes an evaluation of PM₁₀ continuous monitors and development of an aerosol classifier for determining particle size distributions. The Agency will also initiate a program to develop and improve methods for measuring human exposure to acid aerosols. Specifically, this research will include measurements of indoor and outdoor concentrations, improvement of existing instruments and measurement methods, and development of instruments which can quickly determine peak exposures. Finally, other ambient monitoring systems for existing criteria pollutants will be evaluated, improved, and standardized.

Provide Scientific Support to Develop NSPS and SIPs. To ensure the accuracy and precision of data used for NSPS and SIPs regulatory and enforcement decisions, source measurement methodologies and quality assurance techniques will be developed for a variety of pollutants with emphasis on fine particles; quality assurance for the source monitoring program will be provided to other Agency offices, states, and Regions; and certified reference materials for users will be distributed. In addition, three-dimensional data in real-time intervals will be obtained using Light Induced Detection and Ranging (LIDAR) techniques which are faster than fixed site monitoring and will provide a quick way to make three dimensional area comparisons of selected pollutants. Several monitoring and quality assurance activities will be moved from the NAAQS objective into this objective in 1990 because they pertain directly to SIPs rather than NAAQS development.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. Source emission monitoring is needed to set the National Emission Standards for Hazardous Air Pollutants mandated by the Clean Air Act (CAA) and to determine compliance with these standards. In support of this goal, efforts will focus on completing methodologies for ensuring compliance with existing NESHAPS and conducting research to develop, evaluate and standardize monitoring systems for ambient and stationary sources. Specific methods are needed for asbestos, cadmium, nickel, and gaseous organics. Measurement techniques such as selective detectors and portable monitors will also be investigated to improve the surveillance and control of industrial sources. The Integrated Air Cancer Project (IACP), a multidisciplinary research program to quantify exposure to airborne pollutants, will emphasize methods development for both indoor and outdoor detection of carcinogenic HAPs.

Provide Scientific Support to the Mobile Source Regulatory Program. This research will focus on improving the data base on actual human exposure to mobile source pollutants. A general methodology for measuring population exposure to carbon monoxide emitted from mobile sources has been successfully field tested. This method will be extended to other mobile source pollutants. In addition, data on human activity patterns and statistical models which predict human exposures to pollutants while traveling will be evaluated.

Provide Scientific Data on the Sources, Exposures, and Health Effects Associated with Indoor Air Pollutants and Evaluate Control Strategies. Based on the human exposure research needs identified by the Total Human Exposure Research Council and the Agency's Indoor Air Quality Implementation Plan, indoor air monitoring research will focus on special microenvironments (e.g.

homes, buildings). Studies will be conducted to develop and refine low-cost personal and area monitors and, based on the results of an earlier field study, survey and measurement methods will be refined and used to relate indoor air quality to exposure.

1989 Program

In 1989, the Agency is allocating a total of \$13,167,500 supported by 112.2 total workyears for this program, of which \$6,478,700 is from the Salaries and Expenses appropriation and \$6,688,800 is from the Research and Development appropriation. Ambient air and stationary source monitoring systems, including remote sensing and personal monitors, are being evaluated and improved to help determine air quality trends, support compliance with standards, and meet enforcement needs. The Toxic Air Monitoring Stations (TAMS) are supporting efforts to determine the presence and concentrations of hazardous air pollutants in urban environments. Human exposure monitoring studies are also being carried out through the Integrated Air Cancer Program (IACP), which is focusing on emissions from residential oil burners, residential wood combustion, and automotive emissions, and the TEAM studies, which are focusing on exposure to volatile organic compounds and particulates. Indoor air monitoring research is focused on developing indoor air samplers and quantifying indoor exposures. Quality assurance support emphasizes the development of standard reference materials.

1988 Accomplishments

In 1988, the Agency obligated a total of \$14,289,100 supported by 113.3 total workyears for this program, of which \$6,304,600 was from the Salaries and Expenses appropriation and \$7,984,500 was from the Research and Development appropriation. Specific 1988 accomplishments included: a report on LIDAR R&D and applications; evaluation of a PM₁₀ monitoring methodology; development and evaluation of source monitoring methods for HAPs; the operation and findings from TAMS; a report on population exposure to mobile source pollutants; completion of the TEAM field work on human exposure to VOCs in Los Angeles, Baltimore and New Jersey; and the final report on a five-year study of indoor air quality in ten buildings.

HEALTH EFFECTS

1990 Program Request

The Agency requests a total of \$25,168,800 supported by 115.0 total workyears for this program, of which \$6,794,800 will be for the Salaries and Expenses appropriation and \$18,374,000 will be for the Research and Development appropriation. This represents a decrease of \$686,200 in the Salaries and Expenses appropriation, an increase of \$4,770,000 in the Research and Development appropriation, and a decrease of 2.3 total workyears. The increase in the Research and Development appropriation will provide funding to equip the new clinical research facility planned for Chapel Hill, NC. The decrease in the Salaries and Expenses appropriation and in workyears reflects a reduction in support for in-house research on the health effects of hazardous air pollutants and several criteria pollutants including lead.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. Acute, chronic, and sub-chronic exposure to criteria pollutants will be investigated to support the CAA mandate for periodic reviews of NAAQS and to refine the toxicological and epidemiological data base relevant to criteria pollutants. The respiratory and immunological effects of ozone, acid aerosols, particles, and to a lesser degree, NO₂ will be emphasized. The relationship between long-term exposure to urban patterns of ozone and the onset or exacerbation of chronic lung disease and the pulmonary effects associated with exposure to acid aerosols will be studied. Data from the epidemiology study of lung cancer in China will be evaluated to determine the impact of exposure to particulates and sulfur oxides on both lung cancer and respiratory function. Finally, to support the human inhalation studies conducted under this research program, additional resources will be provided to procure equipment for the new clinical research facility at Chapel Hill, NC.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. Based on priorities identified within the Office of Research and Development and by Agency regulatory offices, this research program will evaluate whether prolonged exposures to ambient levels of potential HAPs poses a significant health risk. In support of this effort, the IACP will examine possible marker compounds associated with exposures from residential oil burners, residential wood combustion, and automotive emissions. Tier I bioassays will also be conducted to assess the mutagenic and carcinogenic effects of exposure to individual hazardous chemicals and urban mixtures. Finally, dose-response assays for several compounds will emphasize the effects of acute exposures and dosimetry studies will focus on pulmonary deposition.

Provide Scientific Support to the Mobile Source Regulatory Program. This research program will produce data for the Office of Mobile Sources (OMS) on the public health and welfare risks resulting from exposure to automotive emissions and their atmospheric transformation products. Research on the carcinogenicity and mutagenicity of motor vehicle fuels and additives, including methanol, will be conducted. The data collected will be used in health risk assessments for mobile source pollutants.

Provide Scientific Data on the Sources, Exposures, and Health Effects Associated with Indoor Pollutants and Evaluate Control Strategies. One of the primary goals of the Agency's Indoor Air Quality Implementation Plan is to determine the health risks posed to the general population by exposure to indoor air pollutants. In support of this goal, health effects studies will be conducted on environmental tobacco smoke and volatile organic compounds identified in characterization studies. The health effects associated with the "sick building syndrome" will also be studied. Results from these studies will be used to develop indoor air health risk assessments.

Provide Support for the Health Effects Institute (HEI). Research will focus on human dose response characterization, and the quantification of human risk from mobile source pollutants with increased attention on major uncertainties concerning unregulated automotive pollutants. Federal funding for HEI research will be matched by contributions from manufacturers and marketers of motor vehicles.

Provide Scientific Support to the National Health and Nutrition Examination Survey (NHANES-III). EPA is one of several Federal agencies providing support to the National Center for Health Statistics third national health survey. Support for the data collection phase, which includes interviews, physical examinations, and diagnostic and biomedical testing of a statistically representative sample of Americans, will be provided in 1990. The information obtained, including information on certain pollutants of regulatory concern, such as lead, cadmium and certain volatile organic compounds, will be used to develop important national baseline data on the general health status of the U.S. population. Specific data on respiratory and neurological diseases will be provided.

1989 Program

In 1989, the Agency is allocating a total of \$21,085,000 supported by 117.3 total workyears for this program, of which \$7,481,000 is from the Salaries and Expenses appropriation and \$13,604,000 is from the Research and Development appropriation. Acute, chronic and sub-chronic exposures to ozone and other NAAQS pollutants are being studied with emphasis on determining respiratory, metabolic, and immune system effects. The relationship between exposure and respiratory disease is being defined through epidemiology studies of NO₂, O₃, SO₂, and acid aerosols. Indoor air health effects studies are focusing on improving biomarkers and determining the health effects of indoor VOCs and combustion source emissions. In addition, the toxicity of air pollutants emitted from mobile sources is being studied by HEI and support to initiate the data collection phase of NHANES-III is being provided.

1988 Accomplishments

In 1988, the Agency obligated a total of \$21,366,700 supported by 116.0 total workyears for this program, of which \$7,803,000 was from the Salaries and Expenses appropriation and \$13,563,700 was from the Research and Development appropriation. Twenty five reports/articles were issued addressing a wide variety of research areas including the effects on human health resulting from exposure to criteria pollutants, hazardous air pollutants, and mobile source pollutants.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$7,130,700 supported by 57.5 total workyears for this program, of which \$4,028,000 will be for the Salaries and Expenses appropriation and \$3,102,700 will be for the Research and Development appropriation. This represents an increase of \$636,600 in the Salaries and Expenses appropriation, a decrease of \$34,200 in the Research and Development appropriation, and a decrease of 0.1 total workyears. The increase in the Salaries and Expenses appropriation reflects an enhancement for indoor air source characterization studies and increased personnel and support costs, the decrease in the Research and Development appropriation reflects a slight decrease in research to assess air pollutant control options, and the workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary media.

Provide Support to Develop NSPS and SIPs. Research to support development, review, and enforcement of NSPS and SIPs will focus on: testing a low cost dry calcium silicate injection process (ADVACATE) to reduce emissions of SO₂ and NO_x from new power plants and other emitting sources; evaluating selective catalyst reduction as a means of NO_x reduction; resolving high priority attainment problems including technical barriers associated with PM₁₀ and ozone attainment; and developing options for controlling area VOC emissions which contribute to ozone formation.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. Section 112 of the Clean Air Act directs EPA to provide information on control technologies for hazardous air pollutants. To enhance the Agency's capability in this area and to protect the public health from HAP emissions, resources will be provided to support the Agency's Air Toxics Control Implementation Strategy. The Air Toxics Control Technology Center (CTC) will be expanded to assist state and local agencies and Regions implement air toxics control programs. The CTC will have a rapid-response decision capability based on generic control technology research being done on carbon adsorption, catalytic oxidation, flares, and particle controls. Focused control assessments and technology development will be conducted for key air toxic sources such as woodstoves.

Provide Scientific Data on the Sources, Exposures, and Health Effects Associated with Indoor Air Pollutants and Evaluate Control Strategies. In support of the Agency's Indoor Air Quality Implementation Plan, cost-effective indoor air quality control techniques for both residences and large buildings will be demonstrated, tested, and evaluated. These techniques include modifying pollutant sources and studying both gaseous and particulate filtration strategies. The use of increased temperature and ventilation during occupied periods to reduce indoor exposures to volatile organic compounds in new and remodelled buildings will also be studied. Source characterization research will focus on determining the contribution of various sources including building materials and ventilation systems to indoor air pollution.

1989 Program

In 1989 the Agency is allocating a total of \$6,528,300 supported by 57.6 total workyears for this program, of which \$3,391,400 is from the Salaries and Expenses appropriation and \$3,136,900 is from the Research and Development appropriation. Activities being conducted include: evaluating control technologies for SO₂ and NO_x to support NAAQS compliance; technical support to Regions and states for NSPS compliance; control assessments and technology development for key air toxics sources such as woodstoves; providing information to states and localities on the latest technologies for reducing emissions of HAPs; and technical support to program offices, Regions, states and localities to assist them attain ozone standards. In addition, the multidisciplinary indoor air research program is evaluating air cleaners to determine their effectiveness in removing particles and organic vapors from indoor air.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,440,200 supported by 60.6 total workyears for this program, of which \$3,508,400 was from the Salaries and

Expenses appropriation and \$3,931,800 was from the Research and Development appropriation. Technical support for NSPS compliance and new source control evaluations was provided to Regions and states and control assessments and technology development were done for key air toxics sources. A survey was initiated to determine engineering needs, especially VOC control, for ozone attainment. Indoor Air source characterization and control technology studies were also expanded.

ENVIRONMENTAL PROCESSES AND EFFECTS

1990 Program Request

The Agency requests a total of \$2,254,000 supported by 13.8 total workyears for this program, of which \$953,000 will be for the Salaries and Expenses appropriation and \$1,301,000 will be for the Research and Development appropriation. This represents an increase of \$41,500 in the Salaries and Expenses appropriation with no change in the Research and Development appropriation or total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. Data from EPA's acid deposition research efforts and other air pollution research efforts indicate that tropospheric ozone may have significant adverse impacts on forests. Therefore, the impact of ozone damage on economically and ecologically significant forest species will be assessed. Research on tree responses will begin to assess the risk from ozone on major commercially valuable forest tree species in areas that are most at risk. EPA's research program will be closely coordinated with the Departments of Agriculture, Interior, and Energy, as well as private industry research organizations such as the Electrical Power Research Institute and the National Council for Air and Stream Improvements.

1989 Program

In 1989, the Agency is allocating a total of \$2,212,500 supported by 13.8 total workyears for this program, of which \$911,500 is from the Salaries and Expenses appropriation and \$1,301,000 is from the Research and Development appropriation. Research to determine the ecological effects of tropospheric ozone on forests is being conducted, with emphasis on species of economic importance. Selected forest species are being exposed to ozone levels which are likely to occur in forest regions of the U.S.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,081,000 supported by 10.5 total workyears for this program, of which \$696,700 was from the Salaries and Expenses appropriation and \$1,384,300 was from the Research and Development appropriation. The forest effects of ozone research plan was completed and peer-reviewed and exposure studies on target tree species were initiated. A final report on the NCLAN international scientific meeting was also prepared.

CHARACTERIZATION, TRANSPORT, AND FATE

1990 Program Request

The Agency requests a total of \$12,046,000 supported by 56.5 total workyears for this program, of which \$3,713,400 will be for the Salaries and Expenses appropriation and \$8,332,600 will be for the Research and Development appropriation. This represents a decrease of \$29,500 in the Salaries and Expenses appropriation, an increase of \$1,000,000 in the Research and Development appropriation, and a decrease of 0.2 total workyears. The increase in the Research and Development appropriation reflects an increase in atmospheric transport and fate research on acid aerosols and ozone, the decrease in the Salaries and Expenses appropriation reflects a slight decrease in research on the transport of mobile source pollutants, and the workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary media.

Provide Scientific Support to Develop and Review Primary and Secondary NAAQS. There is a growing public concern over the degradation of visibility and several states have requested that the Agency conduct research on this problem. Research will focus on the adverse effects of visibility reduction. Specifically, air quality data obtained through field programs will be used to provide a risk assessment for particulate matter damage to materials. An integrated program will also be initiated to study acid aerosol formation and neutralization. The effort will begin to focus on determining the temporal and spatial distributions of acid aerosols in the atmosphere and understanding the atmospheric processes associated with their formation and removal.

Provide Scientific Support to Develop NSPS and SIPs. To comply with the Clean Air Act, the states and EPA must have air quality models to develop and review SIPs for urban ozone. To assist in that regard, an evaluated chemical mechanism that predicts ozone formation will be provided to the program office for use by state governments in preparing ozone SIPs. Laboratory studies will be conducted to assess the atmospheric chemistry of formaldehyde, an ozone precursor. Data from the 1988 acid deposition field study will be used to evaluate the Regional Particulate Model to improve its use for PM₁₀ attainment strategies. To develop urban scale particulate models, studies of urban boundary conditions will be undertaken, using 1989 regional mass measurement field study data. A fugitive dust field study will be conducted to improve emission factors for particle size distribution from roadways and construction sites. The User's Network for Applied Modeling of Air Pollution (UNAMAP), a program to transfer air quality modeling technology to State and local officials, will also be updated to provide 23 air quality models for use in NAAQS attainment.

The Regional Oxidant Model (ROM), which has been developed to test and evaluate control strategies for ozone abatement in the Northeastern U.S., will be expanded for application to other regions of the U.S., such as the Southeast. In order to expand the ROM to other non-attainment areas outside the Northeast, regional differences in hydrocarbon emissions, meteorology, and geography must be analyzed. The initial emphasis will focus on the Southeast, where emissions data bases and meteorological data will be collected and prepared to support this effort. ROM will be upgraded in terms of its ability to predict both atmospheric transport and chemistry of ozone pollution.

Provide Scientific Support to Develop Regulations for Hazardous Air Pollutants. To support the Agency's new 5-year Urban Air Toxics Program and to meet the mandate in the CAA to identify unregulated pollutants hazardous to human health and the environment, laboratory and field studies will be conducted to determine the atmospheric reaction rates and transformation products of hazardous air pollutants under Agency review. The chemistry of these pollutants will be studied under conditions that simulate atmospheric conditions. Studies will be conducted to identify hazardous pollutants formed in the atmosphere from innocuous air pollutants emitted from a variety of sources and field measurements will quantify the ambient concentration variabilities of hazardous pollutants in the urban atmosphere. In addition, as part of EPA's Integrated Air Cancer Project, the formation, stability, and transformation of volatile and aerosol bound organics will be examined.

Provide Scientific Support to the Mobile Source Regulatory Program. To assess the potential risk to public health and welfare and to support the Office of Mobile Sources regulatory program, research will characterize both regulated and selected unregulated emissions. The impact of mobile source control technologies on evaporative and automobile exhaust emissions will be evaluated and analytical procedures will be developed to characterize motor vehicle emissions. Procedures will also be developed for laboratory simulation of roadway driving conditions and tailpipe, evaporative, and refueling emissions from vehicles powered by gasoline or methanol blend fuels. Emissions will be characterized based on vehicle configuration, fuel composition and operating variables such as speed, load, and temperature.

1989 Program

In 1989, the Agency is allocating a total of \$11,075,500 supported by 56.7 total workyears for this program, of which \$3,742,900 is from the Salaries and Expenses appropriation and \$7,332,600 is from the Research and Development appropriation. Improved chemical models are being developed which will reduce errors or uncertainties in predicting ozone formation associated with precursor emissions of VOCs and NO_x. Other ozone work underway includes evaluation of the ROM against data obtained during several field studies and application of the ROM to determine impacts of simulated VOC and NO_x emission controls on ozone air quality. The impact of atmospheric levels of fine particulate matter on visibility reduction, including the relationship of fine particles and haze patterns in the Eastern United States, is also being studied.

1988 Accomplishments

In 1988, the Agency obligated a total of \$10,874,800 supported by 59.6 total workyears for this program, of which \$3,538,900 was from the Salaries and Expenses appropriation and \$7,335,900 was from the Research and Development appropriation. Studies were completed on haze patterns over the Eastern United States and regional scale ozone modeling techniques were applied to investigate the impact of hydrocarbon emissions from treatment, storage and disposal facilities on ambient ozone levels. A study was also completed on the influence of ambient temperature on tailpipe emissions from light duty gasoline motor vehicles.

STRATOSPHERIC MODIFICATION

1990 Program Request

The Agency requests a total of \$19,660,400 supported by 30.9 total workyears for this program, of which \$2,053,400 will be for the Salaries and Expenses appropriation and \$17,607,000 will be for the Research and Development appropriation. This represents increases of \$1,129,000 and \$8,700,000 respectively, and an increase of 15.9 total workyears. This resource increase will be used to significantly enhance the global warming research program. Data from this program will provide policy-makers with the foundation to reliably project potential regional environmental consequences of global warming.

Provide Scientific Data to Determine the Effects of Stratospheric Ozone Depletion and Evaluate Control Technologies. Through the Montreal Protocol, the international community has formally identified depletion of the stratospheric ozone layer as one of the most important environmental problems facing the world today. To address the scientific uncertainties associated with ozone depletion, the Agency will conduct a multidisciplinary research program that will determine the impacts of increased UV-B radiation on terrestrial and aquatic ecosystems and human health; investigate mitigative solutions; and continue work on a ground-based UV-B monitoring network with international linkages. Terrestrial effects studies will emphasize the impact of UV-B levels (dose) and other widespread anthropogenic factors such as global climate change and tropospheric ozone on agricultural and forested ecosystems. Aquatic effects research will focus on determining UV-B effects on the marine food chain and fisheries production. Research results will be disseminated within the U.S. and to developing nations.

Provide Scientific Data to Determine the Effects of Global Warming and Evaluate Control Strategies. The potential impact of global climate change could pose the largest and most significant long-term man-made environmental problem of the future. To provide policy-makers with reliable projections on the potential for global warming and its environmental consequences, the current research program will be expanded substantially. The 1990 program will focus on regional-scale effects including the impact of climate change on key ecosystems (such as boreal forests). The proposed research, which has been coordinated with other Federal agencies such as NASA, NOAA, and the DOE, will emphasize estimating potential changes in such major resources as forested ecosystems and surface water. Also, emissions research will develop data for source/sink relationships for a variety of radiative trace gases, and evaluate potential emission management techniques. Atmospheric modeling will expand to include estimates of global consequences of tropospheric air-quality changes. Possible climatic conditions resulting from global warming will be developed for a wide variety of regional situations. Finally, research will be initiated on the effects of global warming on tropical vegetation and bio-diversity; the possible consequences of reforestation strategies on total carbon and nitrogen levels; and analysis of global monitoring data for trace gases.

1989 Program

In 1989, the Agency is allocating a total of \$9,831,400 supported by 15.0 total workyears for this program, of which \$924,400 is from the Salaries and Expenses appropriation and \$8,907,000 is from the Research and Development appropriation. In response to increasing national and international concern over depletion of the stratospheric ozone layer and the potential for significant global temperature increases over the next several decades, the Agency is expanding research on the ecological and human health effects associated with these atmospheric changes. This research is providing Agency policy-makers with the data needed to direct and develop an integrated national strategy to address these global environmental problems. The stratospheric ozone depletion research program is compiling and analyzing data from in-house, national, and international sources to produce a scientific assessment on the adverse effects of stratospheric ozone depletion. Specifically, research includes: studies on the effects of increased UV-B radiation on human health and important aquatic and terrestrial ecosystems. Also, a ground-based UV-B monitoring network is being developed. The global climate research program is studying ecological system sensitivities to climate changes and developing regional maps of the projected consequences of climate change. Methods needed to assess ecological responses are being developed to estimate the potential changes in such major resources as forested ecosystems, and surface water availability. Emissions research on greenhouse gases such as nitrous oxide and methane includes development of emissions factors models and evaluation of existing and potential emission management techniques. Atmospheric modeling research is also expanding to develop estimates of regional consequences of tropospheric and stratospheric air quality changes.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,242,000 supported by 4.5 total workyears for this program, of which \$353,400 was from the Salaries and Expenses appropriation and \$3,888,600 was from the Research and Development appropriation. Emissions estimates research and regional effects case studies were conducted to contribute to the Congressional Report on the potential effects of global climate change. Other accomplishments include compiling data on nitrous oxide emissions, initiating evaluations of forest models for response in changing climate, initiation of an investigation of climate variability in the U. S., and research to support the scientific assessment called for by the Montreal Protocol.

Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>AIR</u>	2-1
ABATEMENT AND CONTROL	
Air Quality and Stationary Source Planning and Standards	2-27
Emission Standards and Technology Assessment	2-29
National Pollutant Policies, Strategies and Rules.	2-31
State Program Guidelines and Air Standards Development	2-34
Mobile Source Air Pollution Control and Fuel Economy.	2-37
Emission Standards, Technical Assessment and Characterization. . .	2-39
Testing, Technical and Administrative Support.	2-40
Emissions and Fuel Economy Compliance.	2-42
State Programs Resource Assistance.	2-44
Control Agency Resource Supplementation (Section 105 Grants) . .	2-45
Training	2-48
Air Quality Management Implementation	2-49
Trends Monitoring and Progress Assessment	2-53
Ambient Air Quality Monitoring	2-55
Air Quality and Emissions Data Management and Analysis	2-57



AIR
Air Quality and Stationary Source Planning and Standards

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Emission Standards & Technology Assessment					
Salaries & Expenses	\$5,569.1	\$4,624.8	\$5,274.1	\$5,525.6	\$251.5
Abatement Control and Compliance	\$7,466.4	\$5,699.7	\$5,478.7	\$8,628.7	\$3,150.0
TOTAL	\$13,035.5	\$10,324.5	\$10,752.8	\$14,154.3	\$3,401.5
National Pollutant Policies, Strategies & Rules					
Salaries & Expenses	\$4,345.8	\$5,200.1	\$1,796.1	\$2,141.2	\$345.1
Abatement Control and Compliance	\$7,267.8	\$11,697.9	\$9,435.6	\$7,935.6	-\$1,500.0
TOTAL	\$11,613.6	\$16,898.0	\$11,231.7	\$10,076.8	-\$1,154.9
State Program Guidelines & Air Standards Development					
Salaries & Expenses	\$3,163.2	\$3,455.2	\$5,518.6	\$5,855.9	\$337.3
Abatement Control and Compliance	\$763.0	\$1,376.6	\$2,952.1	\$4,752.1	\$1,800.0
TOTAL	\$3,926.2	\$4,831.8	\$8,470.7	\$10,608.0	\$2,137.3
TOTAL:					
Salaries & Expenses	\$13,078.1	\$13,280.1	\$12,588.8	\$13,522.7	\$933.9
Abatement Control and Compliance	\$15,497.2	\$18,774.2	\$17,866.4	\$21,316.4	\$3,450.0
Air Quality & Stationary Source Planning & Standards	TOTAL \$28,575.3	\$32,054.3	\$30,455.2	\$34,839.1	\$4,383.9

AIR
Air Quality and Stationary Source Planning and Standards

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PERMANENT WORKYEARS -----					
Emission Standards & Technology Assessment	101.7	93.2	94.7	94.7	
National Pollutant Policies, Strategies & Rules	70.7	76.8	31.3	36.3	5.0
State Program Guidelines & Air Standards Development	60.8	63.3	98.8	100.3	1.5
TOTAL PERMANENT WORKYEARS	233.2	233.3	224.8	231.3	6.5
TOTAL WORKYEARS -----					
Emission Standards & Technology Assessment	104.1	93.2	94.7	94.7	
National Pollutant Policies, Strategies & Rules	74.7	76.8	31.3	36.3	5.0
State Program Guidelines & Air Standards Development	62.7	63.3	98.8	100.3	1.5
TOTAL WORKYEARS	241.5	233.3	224.8	231.3	6.5

Air Quality and Stationary Source Planning and Standards

Budget Request

The Agency requests a total of \$34,839,100 supported by 231.3 total workyears for 1990, an increase of \$4,383,900 and 6.5 total workyears from 1989. Of the request, \$13,522,700 will be for the Salaries and Expenses appropriation and \$21,316,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of \$933,900 and an increase of \$3,450,000 in the Abatement, Control and Compliance appropriation.

EMISSION STANDARDS AND TECHNOLOGY ASSESSMENT1990 Program Request

The Agency requests a total of \$14,154,300 supported by 94.7 total workyears for this program, of which \$5,525,600 will be for the Salaries and Expenses appropriation and \$8,628,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$251,500 for the Salaries and Expenses appropriation, an increase of \$3,150,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears from 1989. The increases will provide implementation support on control technology for ozone and size-specific particulate matter (PM₁₀) programs as well as support for development of a national rule on hospital waste incineration.

A major program emphasis in 1990 will continue to be air toxics, including development of standards under National Emission Standards for Hazardous Air Pollutants (NESHAPs) and other authorities and regulatory decisions for high priority pollutants/source categories. During 1990 the program includes development of NESHAPs for asbestos (revision), coke oven emissions, dry cleaning, degreasing, machinery manufacturing/rebuilding, ethylene oxide, hazardous organic NESHAP, chromium (one NESHAP, one Toxic Substances Control Act (TSCA) rule), and two new NESHAPs from the pollutant/source category priority list; development of NSPSs for municipal landfills and municipal waste combustion including section 111(d) guidelines; a control technology document (CTD) for wastewater facilities; and regulatory decisions for five to ten pollutant/source categories. In addition, work will continue on development of a national rule on hospital waste incineration.

In 1990 six New Source Performance Standards (NSPSs) will be promulgated and two of the remaining six NSPSs on the priority list will be under development. These NSPSs will provide information useful to the states for sustained progress toward meeting the ozone air quality program requirements.

Support for technology transfer to state and local agencies on ozone and air toxics will continue through the National Air Toxics Information Clearinghouse (NATICH), the Control Technology Center (CTC), the Air Risk Information Support Center (AirRISC), and the Best Available Control Technology/Lowest Achievable Emission Rate (BACT/LAER) Clearinghouse.

In 1990 the program includes support for the development of CTDs. For ozone, work will begin on 11 documents which identify available emission control technologies for source categories that are unregulated by State Implementation Plans (SIPs). The 11 source categories include point sources and area sources that contribute more than 480,000 tons per year of volatile organic compound (VOC) emissions in nonattainment areas. For PM₁₀, documents will be under development which identify emission controls for non-traditional sources, such as rural fugitive dust and residential woodstoves. The program also includes support for effective transfer of this information to state and local agencies.

1989 Program

In 1989 the Agency is allocating a total of \$10,752,800 supported by 94.7 total workyears to this program, of which \$5,274,100 is from the Salaries and Expenses appropriation and \$5,478,700 is from the Abatement, Control and Compliance appropriation.

In 1989 NSPS development continues. Work continues on 13 priority list NSPSs, but development of the final six NSPSs on the list has been deferred due to higher priority work. Other activities include litigation work relating to particulate matter, nitrogen oxide (NO_x), and sulfur dioxide (SO₂) emissions from industrial boilers; and implementation support to states for ozone and PM₁₀ SIP development.

Notices of Intent to List (NITL) under section 112 have been published for ten pollutants (butadiene, carbon tetrachloride, cadmium, chromium, ethylene dichloride, chloroform, perchloroethylene, trichloroethylene, ethylene oxide, and methylene chloride). The current program is oriented toward regulation of source categories that emit these ten pollutants; development of NESHAPs for coke oven emissions; settling NESHAPs litigations on benzene, arsenic, and vinyl chloride; and making regulatory decisions on new pollutant/source category combinations that warrant Federal regulations. Work continues on the proposal of standards for municipal landfills and municipal waste combustors. Work has begun on the development of a national rule for hospital waste incineration.

Consistent with the National Air Toxics Strategy, implementation support is also being provided to state air toxic pollutant control programs. This support is being provided through the operation of four centers and clearinghouses and the publication of implementation support and technology transfer documents for air toxics and ozone control.

1988 Accomplishments

In 1988 the Agency obligated a total of \$13,035,500 supported by 104.1 total workyears, of which \$5,569,100 was from the Salaries and Expenses appropriation and \$7,466,400 was from the Abatement, Control and Compliance

appropriation.

In 1988 three NSPSs were promulgated, rules were proposed for chromium (comfort cooling towers) under TSCA, and the proposed response to benzene litigation was published along with proposed benzene NESHAPs for four source categories.

NATIONAL POLLUTANT POLICIES, STRATEGIES AND RULES

1990 Program Request

The Agency requests a total of \$10,076,800 supported by 36.3 total workyears for this program, of which \$2,141,200 will be for the Salaries and Expenses appropriation and \$7,935,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$345,100 in the Salaries and Expenses appropriation, a decrease of \$1,500,000 in the Abatement, Control and Compliance appropriation and an increase of 5.0 total workyears. The increases reflect increased personnel and support costs to implement indoor air pollution building studies and an information clearinghouse and a program to charge market value for chlorofluorocarbon (CFC) and halon production. The decrease reflects anticipated completion of certain stratospheric ozone depletion studies and regulatory development activities in 1989.

In 1990 the Indoor Air Program will consist of policy analyses, coordination within the Federal establishment, participation in a North Atlantic Treaty Organization Committee on the Challenges of Modern Society pilot study on indoor air quality, development and issuance of additional fact sheets on key aspects of the indoor air quality problem, and development of more guidance for building owners. The Indoor Air Program will maintain and expand contact with appropriate private sector organizations and state and local agencies involved in indoor air quality activities. Additional information will be provided on risk and economic effects of indoor air pollutants. The program will expand its analysis and conduct field studies and surveys to determine the extent of various "sick building" problems including the issues of chemical sensitivity and building diagnostics. In addition, the Indoor Air Program will initiate the implementation of the Indoor Air Quality Technical and Non-Technical Information Clearinghouse.

In 1990 the Acid Rain Program will continue responding to the ten-year, \$500 million, National Acid Precipitation Assessment Program (NAPAP), an interagency policy research program. This program will be completed by the end of 1990. Coordination of and primary research on the economic aspects of the NAPAP final report will be completed. Analysis of acid rain legislation will continue. Support to the Administrator and Assistant Administrator for their participation on the Domestic Policy Council (or its successor organization) and the U.S. Bilateral Advisory and Consultative Group (BACG) will continue. Also, in 1990 advice will continue to be provided to Department of Energy (DOE), through the Innovative Control Technology Advisory Panel (ICTAP), on DOE's five-year, \$2.5 billion Clean Coal Technology (CCT) Program. The Acid Rain Program will review, comment on, and help resolve controversial air permit application issues for CCT demonstration projects, and will assist DOE in obtaining air, water, and solid waste CCT permits.

In 1990 the Global Change Program will continue many of the activities started in 1989 and will initiate new projects. Domestically, the Agency will develop its stratospheric ozone regulatory program and rules, as well as and operate and enforce the program established in 1989. The current rulemaking will be revised to charge market value for the privilege of producing or importing CFCs or halons. Mechanisms to be considered could include: permit fees; auctions; and other methods of capturing windfall profit that would accrue to producers under the current rule. Monitoring of CFCs and halons production will continue with timely data review, additional compliance monitoring, technology reviews, better information control, and overall systems performance. As part of the continuing effort to develop new proposals for rulemaking, the program will incorporate public comments and results of regulatory reviews by other agencies and EPA offices. The program will also be integrally involved in the coordination of domestic and international efforts to develop alternative technologies.

Internationally, the program will continue to support the implementation of the Montreal Protocol. In 1990 EPA will participate in a series of assessments: atmospheric, environmental, technological, and economic. EPA is likely to be involved with the Protocol's working legal group and ad hoc groups to negotiate U.S. technology transfer responsibilities. In addition, the Agency will continue to participate in efforts to get other nations to sign the Protocol and will work with other Federal agencies to negotiate further revisions. The tropospheric climate element of the Global Change Program will initiate exploratory analysis of some point and non-point source emissions and control technologies and their relationship and emission impact on existing pollution control decisions.

1989 Program

In 1989 the Agency is allocating a total of \$11,231,700 supported by 31.3 total workyears to this program, of which \$1,796,100 is from the Salaries and Expenses appropriation and \$9,435,600 is from the Abatement, Control and Compliance appropriation.

EPA continues its indoor air effort to provide policy, coordination, and information dissemination. In 1989 the Indoor Air Program will complete two technical documents initiated in 1988, one on the mitigation of environmental tobacco smoke and one on prevention of building-related problems. In addition, in-house staff will coordinate the program and develop fact sheets. The Indoor Air Program will initiate a program to communicate with various target groups on possible "sick building" causes and solutions. The Report to Congress on the long-term Federal role in indoor air quality will be completed and a booklet on indoor air quality will be reprinted and issued.

In 1989 the Acid Rain Program will continue to focus on acid rain policy and implementation issues. Legislative analysis will continue to focus on new and potential legislative actions. In 1989 technical assistance and environmental policy formulation and implication activities will continue to be provided to DOE on their CCT Program and NAPAP relative to the results of research for the 1990 NAPAP Assessment. The Acid Rain Program will continue to respond to petitions calling for additional control on U.S. sulfur dioxide (SO₂) and nitrogen oxides (NO_x). Support for on-going Administration discussions with Canada will continue.

In 1989 the Global Change Program activities will focus on implementation of the domestic rule and the conduct of further analyses on possible follow-up regulatory and non-regulatory actions. A program will be established and implemented for enforcing regulatory levels on the production and consumption of CFCs and halons. This involves developing a tracking system for permits, finalizing and implementing a reporting and record keeping system, developing an enforcement strategy, and assessing the market responses to regulation. In addition, protocol assessments and studies to support the United Nation's Environmental Program in the international implementation of the Protocol will be ongoing. The international coordination of various groups and activities concerned with developing alternative technologies and transfer of technologies to lesser developing countries will also continue in 1989.

1988 Accomplishments

In 1988 the Agency obligated a total of \$11,613,600 supported by 74.7 total workyears, of which \$4,345,800 was from the Salaries and Expenses appropriation and \$7,267,800 was from the Abatement, Control and Compliance appropriation.

In 1988 the Indoor Air Program focused on establishing a framework needed to address the indoor air problem through coordinating EPA and Federal indoor air quality activities, analyzing the appropriate Federal role in addressing indoor air quality issues, preparing and disseminating information materials on indoor air quality for the general public, and developing a Report to Congress describing the activities carried out under Title IV of the Superfund Amendments and Reauthorization Act. Publications completed in 1988 included a booklet for the general public on indoor air quality, a directory of state indoor air program contacts, and a series of fact sheets on timely indoor air quality issues.

In 1988 the Acid Rain program focused on acid rain policy and implementation issues. Legislative analyses focused on three potential legislative actions. Also in 1988 the State Acid Rain Program final report was completed that addressed potential acid rain control program implementation issues. Comments were provided to the DOE on their CCT solicitation, and a paper was presented to the ICTAP on potential EPA incentives to encourage innovative control technology demonstrations and deployment. In 1988 results of research from the 1990 NAPAP Assessment were reviewed for their policy implications. The Agency responded to five petitions calling for additional controls of U.S. transboundary SO₂ and NO_x emissions, and supported discussions with Canada on a possible bilateral accord.

In 1988 the Global Change Program issued a final domestic stratospheric ozone rule which will enhance implementation of the Montreal Protocol on the control of production and consumption of CFCs and halons. Technical support on these bilateral activities was also provided. In addition, to establish the stratospheric ozone depletion program and implement regulation, the program developed and disseminated extensive analyses on risk assessment, economic impact, and technology and chemical substitutions. An Advance Notice of Proposed Rulemaking was issued that laid out possible additional regulatory actions.

In the area of global climate change, the Office of Policy Analysis worked on two draft reports to Congress: the "Environmental Effects of Climate Change" and "Policy Options for Stabilizing Climate." The program also worked on developing an initial framework for estimates of future concentrations of trace gases and global temperatures.

STATE PROGRAM GUIDELINES AND AIR STANDARDS DEVELOPMENT

1990 Program Request

The Agency requests a total of \$10,608,000 supported by 100.3 total workyears for this program, of which \$5,855,900 will be for the Salaries and Expenses appropriation and \$4,752,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$337,300 for the Salaries and Expenses appropriation, an increase of \$1,800,000 in the Abatement, Control and Compliance appropriation, and an increase of 1.5 in total workyears from 1989. The increases will support development of policy, guidance, and assistance for preparing SIPs to address long-term nonattainment problems involving ozone, carbon monoxide (CO), and PM₁₀.

In 1990 the Agency will continue to provide management and assistance to attain National Ambient Air Quality Standards (NAAQSs) and prevent significant deterioration (PSD). Regulatory impact analyses (RIAs) for the ozone and lead NAAQS reviews will be completed and a proposal to revise or reaffirm the lead standards will be published. Revised or reaffirmed NAAQSs for sulfur oxides will be promulgated. Addenda to the ozone criteria document and staff paper addressing the need for longer term average standards will be prepared and reviewed by the Clean Air Scientific Advisory Committee (CASAC). Reviews of the nitrogen dioxide (NO₂) and CO NAAQS will be under way as will the evaluation of a potential acid aerosols NAAQS. Review of the need for a new fine particle secondary NAAQS will continue.

The Agency will conduct an active program to carry out the post-1987 ozone/CO attainment strategy. Efforts will focus on assisting states with SIP development, including assisting states in identifying, adopting, and implementing nontraditional control measures that will directly involve the public (e.g., transportation controls and consumer solvent substitution). Procedures and techniques for determining required emission reductions, evaluating and selecting alternative control measures, preparing control strategy demonstrations, tracking progress and compliance, evaluate strategies using the airshed model, and analyzing transport strategies in the Northeast will be provided. Review and regulatory action on SIP submittals from the initial SIP calls will continue.

In 1990 the Agency will continue review and regulatory action on PM₁₀ SIPs, especially for newly identified nonattainment areas (Group II areas). Case-by-case guidance and oversight of state efforts to develop and implement fugitive source and nontraditional source control measures (e.g., street cleaning) will be provided. Policy, guidance, and assistance in problem definition and development of mitigation strategies will be provided for a variety of problems contributing to long-term nonattainment. These include woodstoves, prescribed burning, agricultural activities, and secondary

particle formation. Management and overview of SIPs submitted by states and required by court suits (i.e., visibility, stack heights) will continue. Innovative measures to reduce the SIP backlog and expedite processing, including a computerized SIP tracking and information system, will be fully implemented. A training and information transfer program on the ozone and PM SIP activities described above will be provided using short courses, workshops, and videotapes.

In 1990 state and local air toxics programs will be further enhanced with the implementation and revision of multi-year development plans. Technical and program support to assist states in evaluating and regulating high-risk point source (HRPS) and multi-pollutant urban toxics problems will continue. The new source review (NSR) program will provide guidance and assistance to Regions and states permitting new sources and support to national litigation over current regulations. Regulations will be published setting PSD increments for PM₁₀. Rulemaking on Chemical Manufacturers Association (CMA) Exhibit B issues will be completed.

Also in 1990, the Agency will continue its program to follow up on the results of state audits and needed corrective actions, thereby improving interregional and interstate consistency, addressing critical air pollution infrastructure needs, and resolving current program weaknesses.

1989 Program

In 1989 the Agency is allocating a total of \$8,470,700 supported by 98.8 total workyears to this program, of which \$5,518,600 is from the Salaries and Expenses appropriation and \$2,952,100 is from the Abatement, Control and Compliance appropriation.

In 1989 review of the staff paper for the lead NAAQS is scheduled to be completed by CASAC and the RIA will also be completed. Work on the next round of reviews of the NAAQSs for ozone, CO, and NO₂ and a new fine particle secondary NAAQS is also underway. An evaluation of the need for an acid aerosols NAAQS is being conducted. In the SIP area, primary emphasis is on implementing ongoing programs for CO and ozone nonattainment areas and developing and reviewing PM₁₀ SIPs. Work continues on completing the proposed post-1987 ozone/CO policy, as well as completing SIP calls and nonattainment designations. Policy and assistance is being provided for long-term PM₁₀ nonattainment areas. PM₁₀ SIP submittals are being reviewed. PSD increments are scheduled to be promulgated for NO₂ and proposed for PM₁₀. Policy and regulations to improve NSR programs as well as procedures to improve and expedite SIP processing are scheduled to be published. Guidance and assistance to develop and implement state air toxics programs through multi-year development plans is continuing. Workshops, emissions factors, inventory procedures, and other support is being provided to help states evaluate and regulate HRPS and multi-pollutant urban toxic problems.

1988 Accomplishments

In 1988 the Agency obligated a total of \$3,926,200 supported by 62.7 total workyears, of which \$3,163,200 was from the Salaries and Expenses appropriation and \$763,000 was from the Abatement, Control and Compliance appropriation.

NAAQS review activities in 1988 focused on lead, ozone, SO₂, and possible standards for fine particles and acid aerosols. A proposal to reaffirm the current SO₂ standards was published. A policy for post-1987 nonattainment of CO and ozone was proposed. Nonattainment area designations were proposed pursuant to the Mitchell/Conte Amendment. SIP calls for deficient CO and ozone SIPs were issued. PSD increments for NO₂ were proposed. Regulations to protect visibility impairment in PSD Class I areas were promulgated for new sources and proposed for existing sources in four states.

AIR
Mobile Source Air Pollution Control and Fuel Economy

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Emission Standards,
Technical Assessment &
Characterization

Salaries & Expenses	\$4,163.7	\$4,475.0	\$5,026.7	\$5,162.4	\$135.7
Abatement Control and Compliance	\$2,834.5	\$5,288.9	\$5,091.2	\$6,499.7	\$1,408.5
TOTAL	\$6,998.2	\$9,763.9	\$10,117.9	\$11,662.1	\$1,544.2

Testing, Technical &
Administrative Support

Salaries & Expenses	\$5,384.6	\$5,244.8	\$5,244.8	\$5,493.4	\$248.6
Abatement Control and Compliance	\$850.2	\$850.2	\$850.2	\$850.2	
TOTAL	\$6,234.8	\$6,095.0	\$6,095.0	\$6,343.6	\$248.6

Emissions & Fuel
Economy Compliance

Salaries & Expenses	\$2,072.1	\$1,835.6	\$1,835.6	\$2,002.8	\$167.2
Abatement Control and Compliance	\$33.1	\$33.1	\$33.1	\$33.1	
TOTAL	\$2,105.2	\$1,868.7	\$1,868.7	\$2,035.9	\$167.2

TOTAL:

Salaries & Expenses	\$11,620.4	\$11,555.4	\$12,107.1	\$12,658.6	\$551.5
Abatement Control and Compliance	\$3,717.8	\$6,172.2	\$5,974.5	\$7,383.0	\$1,408.5

Mobile Source Air
Pollution Control &
Fuel Economy

TOTAL	\$15,338.2	\$17,727.6	\$18,081.6	\$20,041.6	\$1,960.0
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AIR
Mobile Source Air Pollution Control and Fuel Economy

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS)					
PERMANENT WORKYEARS					

Emission Standards, Technical Assessment & Characterization	72.5	84.3	84.8	84.8	
Testing, Technical & Administrative Support	91.5	92.9	92.9	92.9	
Emissions & Fuel Economy Compliance	31.5	33.1	33.1	35.1	2.0
TOTAL PERMANENT WORKYEARS	195.5	210.3	210.8	212.8	2.0
TOTAL WORKYEARS					

Emission Standards, Technical Assessment & Characterization	78.9	84.3	84.8	84.8	
Testing, Technical & Administrative Support	94.3	92.9	92.9	92.9	
Emissions & Fuel Economy Compliance	33.6	33.1	33.1	35.1	2.0
TOTAL WORKYEARS	206.8	210.3	210.8	212.8	2.0

Mobile Source Air Pollution Control and Fuel Economy

Budget Request

The Agency requests a total of \$20,041,600 supported by 212.8 total workyears for 1990, an increase of \$1,960,000 and an increase of 2.0 total workyears from 1989. Of the request, \$12,658,600 will be for the Salaries and Expenses appropriation and \$7,383,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$551,500 in the Salaries and Expenses appropriation and an increase of \$1,408,500 in the Abatement, Control and Compliance appropriation.

EMISSION STANDARDS, TECHNICAL ASSESSMENT AND CHARACTERIZATION1990 Program Request

The Agency requests a total of \$11,662,100 supported by 84.8 total workyears for this program, of which \$5,162,400 will be for the Salaries and Expenses appropriation and \$6,499,700 will be for the Abatement, Control and Compliance appropriation. This is an increase of \$135,700 for the Salaries and Expenses appropriation, \$1,408,500 for the Abatement, Control and Compliance appropriation, and no change in total workyears from 1989. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The increase in the Abatement, Control and Compliance appropriation will support additional work related to the use of alternative fuels.

In 1990 the standards program will continue to emphasize control of ozone precursors and air toxics. Work will also ensure implementation support to the new methanol emission standards as well as to the on-board refueling and volatility regulations. Specific technology assessment work will focus on the implementation of the post-1987 ozone/carbon monoxide attainment strategy. In addition, the emissions impact of alternative fuels, such as oxygenated blends and Compressed Natural Gas (CNG), will be investigated. Additional testing of in-use vehicles will assess the effectiveness of emission control technologies in controlling carbon monoxide emissions under cold temperature conditions. The Emissions Factor Program will continue to determine emissions from in-use vehicles. A pilot study will continue to assess sampling methodologies and their effectiveness in closing the gaps in data on actual emissions from in-use vehicles.

The final rule for controlling diesel fuel composition consistent with toxics particulate control will be published. Also, the final rule for heavy-duty emissions banking and trading will be promulgated. Revised light-duty truck hydrocarbon standards will be promulgated. Additional work will be done to insure the effectiveness of the enhanced vehicle inspection and maintenance programs put into place by state and local jurisdictions. In

addition, 15 audits and follow-ups of state and local Inspection and Maintenance programs will be completed.

1989 Program

In 1989 the Agency is allocating a total of \$10,117,900 supported by 84.8 total workyears for this program, of which \$5,026,700 is from the Salaries and Expenses appropriation and \$5,091,200 is from the Abatement, Control and Compliance appropriation.

In 1989 the standards program is continuing to emphasize control of ozone precursors and air toxics. The regulatory program is continuing to concentrate on control of evaporative and refueling emissions, excess hydrocarbon emissions, formaldehyde, methanol, and particulates. Final emission standards and test procedures for methanol vehicles are being promulgated. Revised light-duty truck hydrocarbon standards are being proposed. Testing of in-use vehicles to develop emission factors will be carried out. A pilot study to assess alternative sampling methodologies for developing in-use emission factors will be undertaken. The objective will be to determine the most effective way to close gaps in data on actual emissions from in-use vehicles. Support to the development of State Implementation Plans is continuing with emphasis on inspection and maintenance programs for in-use vehicles. A total of 15 formal audits and follow-ups of state and local inspection and maintenance programs are being completed.

1988 Accomplishments

In 1988 the Agency obligated a total of \$6,998,200 supported by 78.9 total workyears, of which \$4,163,700 was from the Salaries and Expenses appropriation and \$2,834,500 was from the Abatement, Control and Compliance appropriation.

The program provided implementation assistance and review of State Implementation Plans, particularly vehicle inspection and maintenance programs. In 1988 ten inspection and maintenance program audits were carried out to assess the effectiveness of state and local efforts. Four new inspection and maintenance programs were begun in 1988, bringing the total number of urban areas with inspection programs to 64.

In support of the Agency's air toxics control strategy, the regulatory program continued work on control of formaldehyde and particulate matter. Characterization of emissions from vehicles powered by alternative fuels also continued, including work on a rulemaking setting standards and test procedures for methanol-fueled vehicles. With the implementation of lead phasedown, additional work was directed towards alternatives to leaded gasoline. A systematic review of the heavy-duty standards for hydrocarbons, carbon monoxide, and particulate matter continued for potential future revision.

TESTING, TECHNICAL AND ADMINISTRATIVE SUPPORT

1990 Program Request

The Agency requests a total of \$6,343,600 supported by 92.9 total

workyears for this program, of which \$5,493,400 will be for the Salaries and Expenses appropriation and \$850,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$248,600 in the Salaries and Expenses appropriation, no change in the Abatement Control and Compliance and no change in total workyears from 1989. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs.

This program will provide testing, technical, and administrative support to the operating programs of the Office of Mobile Sources at the Motor Vehicle Emissions Laboratory (MVEL) located in Ann Arbor, Michigan. Approximately 1,000 tests will be performed on prototype vehicles, and 1,350 tests on in-use vehicles in support of the emissions factors and recall programs. In addition, 100 tests on new and in-use heavy-duty engines will be provided to support the implementation and enforcement of the standards for these engines. General activities that will be supported include recall, tampering and fuel switching, standard-setting, emissions characterization, technology assessment, fuel economy, in-use vehicle emissions assessment, and motor vehicle emission certification. The support that will be provided includes: automated data processing (ADP) timesharing services, laboratory data acquisition, and computer operations; testing of motor vehicles to measure emissions and fuel economy; quality assurance and control and correlation services for EPA and industry testing programs; maintenance and engineering design of emission testing equipment; and personnel, administrative, safety, environmental compliance, and facilities support services. Testing and analysis of approximately 12,000 fuel samples collected for enforcement purposes (including volatility control) will continue.

1989 Program

In 1989 the Agency is allocating a total of \$6,095,000 supported by 92.9 total workyears for this program, of which \$5,244,800 is from the Salaries and Expenses appropriation and \$850,200 is from the Abatement, Control and Compliance appropriation.

The 1989 program continues to focus on increasing the efficiency of the testing, technical, and administrative support operations while maintaining or expanding the quality and quantity of outputs.

Testing support to the certification, fuel economy, and in-use compliance and assessment programs continues with a total of approximately 2,350 tests scheduled for these programs in 1989. Testing activities supported at the MVEL range from performing standard, well-established engineering tests to the development and performance of new test procedures to accommodate new program needs or changing technology.

Routine testing and analysis of 12,000 fuel samples collected in the field for enforcing fuels regulations continues. Correlation programs to maintain equivalent test procedures between manufacturers and EPA continue. Test equipment maintenance, calibration, and repair services are being provided. The adequacy of existing procedures and equipment to test newer technology vehicles is being evaluated. If necessary, new equipment and procedures will be designed. In addition, personnel, facility support services, safety, ADP, and administrative management functions are provided at the MVEL.

1988 Accomplishments

In 1988 the Agency obligated a total of \$6,234,800 supported by 94.3 total workyears for this program, of which \$5,384,600 was from the Salaries and Expenses appropriation and \$850,200 was from the Abatement, Control and Compliance appropriation.

In 1988 a total of 1,000 tests were conducted for certification, fuel economy labeling, and compliance programs. Testing in support of the recall, surveillance, tampering/fuel switching programs; the development of emission factors; and the assessment of the effectiveness of new emissions control technology in maintaining the emission standards in use resulted in 1,500 tests on in-use vehicles in 1988. Routine testing and analysis of 9,113 fuel samples (collected in the field) were performed in 1988 to enforce fuel regulations.

Basic personnel and administrative management functions, including ADP management, were provided. Also, safety and facility services, aimed at maintaining a high level of occupational safety and health, were provided.

EMISSIONS AND FUEL ECONOMY COMPLIANCE

1990 Program Request

The Agency requests a total of \$2,035,900 supported by 35.1 total workyears for this program, of which \$2,002,800 will be for the Salaries and Expenses appropriation and \$33,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$167,200 in the Salaries and Expenses appropriation and an increase of 2.0 total workyears but no change in the Abatement, Control and Compliance appropriation from 1989. The increase in total workyears will support the development of regulations for the collection of mobile source program fees.

The emissions certification program will continue to assess the validity of the applications for certification of approximately 100 original equipment manufacturers of light-duty vehicles, heavy-duty engines, and motorcycles. Participation in the certification program by importers reselling vehicles is expected to continue to increase as a result of new rules published in 1988. Approximately 40 certificate holders will be bringing non-conforming imports into compliance.

In 1990, the in-use control effectiveness assessment program will shift focus to assess the effectiveness of onboard diagnostic systems in identifying component failure. Work will continue on suspected problems with manufacturers' alleged use of defeat devices and more testing will be done under non-Federal Test Procedure conditions to assess the degree to which emission control devices control emissions only on the standard test cycle and do not do so in actual on-road use. Changes in certification resulting from volatility controls will be implemented.

The statutory fuel economy information program will be carried out, with the provision of 1,000 labels, 50 CAFE calculations, and data for the Gas

Mileage Guide. Guidance to manufacturers on implementing changes required by revisions to the fuel economy regulations will continue.

1989 Program

In 1989 the Agency is allocating a total of \$1,868,700 supported by 33.1 total workyears for this program, of which \$1,835,600 is from the Salaries and Expenses appropriation and \$33,100 is from the Abatement, Control and Compliance appropriation.

The emissions certification program is continuing to issue certificates of compliance to approximately 100 original equipment manufacturers of light-duty vehicles, heavy-duty engines, and motorcycles. Participation in the certification program by importers reselling vehicles will begin to increase resulting from rules promulgated in 1987. Streamlined procedures for handling these new certificate holders will be developed. In 1989 the in-use program is placing further emphasis on assessment of high mileage vehicle control technology and the precise nature of failures to meet standards at high mileage. Work is also focusing on suspected problems with manufacturers' use of defeat devices, as well as on emissions under conditions different from the Federal Test Procedure. This additional engineering analysis will help assess the degree to which emission control devices differ relative to the standard test cycle versus actual on-road operational conditions. Procedures for certifying aftermarket parts will be promulgated.

The statutory fuel economy information program is being carried out, with 1,000 labels, 50 CAFE calculations, and data for the Gas Mileage Guide being produced. Guidance to manufacturers on implementing changes required by revisions to the fuel economy regulations is continuing.

1988 Accomplishments

In 1988 the Agency obligated a total of \$2,105,200 supported by 33.6 total workyears for this program, of which \$2,072,100 was from the Salaries and Expenses appropriation and \$33,100 was from the Abatement, Control and Compliance appropriation.

The emissions certification program issued certificates of compliance to approximately 100 original equipment manufacturers of light-duty vehicles, heavy-duty engines, and motorcycles. A certificate was issued to one Independent Commercial Importer. Certification engineering review continued to deter the production of vehicle designs not capable of meeting emission standards. Participation in the certification program by importers reselling vehicles continued to increase. A regulation for aftermarket parts certification was proposed. The fuel economy program generated 1,000 fuel economy labels, verified 50 CAFE calculations, and compiled data for the Gas Mileage Guide. The in-use technology assessment program examined durability of control technology at high mileage.

AIR
State Programs Resource Assistance

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Control Agency Resource Supplementation (Section 105 Grants)					
Abatement Control and Compliance	\$94,164.0	\$101,500.0	\$101,500.0	\$99,700.0	-\$1,800.0
TOTAL	\$94,164.0	\$101,500.0	\$101,500.0	\$99,700.0	-\$1,800.0
Training					
Salaries & Expenses	\$269.1	\$252.7	\$252.7	\$259.1	\$6.4
TOTAL	\$269.1	\$252.7	\$252.7	\$259.1	\$6.4
TOTAL:					
Salaries & Expenses	\$269.1	\$252.7	\$252.7	\$259.1	\$6.4
Abatement Control and Compliance	\$94,164.0	\$101,500.0	\$101,500.0	\$99,700.0	-\$1,800.0
State Programs Resource Assistance	TOTAL \$94,433.1	\$101,752.7	\$101,752.7	\$99,959.1	-\$1,793.6
PERMANENT WORKYEARS -----					
Training	4.0	4.0	4.0	4.0	
TOTAL PERMANENT WORKYEARS	4.0	4.0	4.0	4.0	
TOTAL WORKYEARS -----					
Training	4.3	4.0	4.0	4.0	
TOTAL WORKYEARS	4.3	4.0	4.0	4.0	

State Programs Resource Assistance

Budget Request

The Agency requests a total of \$99,959,100 supported by 4.0 total workyears for 1990, a decrease of \$1,793,600 and no change in total workyears from 1989. Of the request, \$259,100 will be for the Salaries and Expenses appropriation and \$99,700,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of \$6,400 and a decrease of \$1,800,000 in the Abatement, Control and Compliance appropriation.

CONTROL AGENCY RESOURCE SUPPLEMENTATION (SECTION 105 GRANTS)

1990 Program Request

The Agency requests a total of \$99,700,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$1,800,000 resulting from the completion of funding for selected special projects.

In 1990 states will continue to be heavily involved in the implementation of EPA's post-1987 ozone/carbon monoxide (CO) attainment strategy. Efforts to correct deficiencies in existing stationary source and mobile source control programs will continue, ongoing programs will be reviewed for effectiveness, monitoring and compliance programs will be continued, and State Implementation Plans (SIPs) will be prepared for those areas not in attainment. In order to develop SIPs, it will be necessary for states to analyze long-range transport issues, evaluate and select alternative control measures, and develop vehicle inspection and maintenance (I/M) strategies. Emissions inventories to support alternative projected attainment dates for ozone and CO nonattainment areas will be developed.

States will continue monitoring programs in Group I size-specific particulate matter (PM₁₀) areas, including those areas with long-term nonattainment problems, as they develop PM₁₀ SIPs. In addition to Group I PM₁₀ SIPs, states will continue to develop SIPs in any Group II or III areas which show monitored air quality violations. States will also develop SIPs that will replace total suspended particulate (TSP) Prevention of Significant Deterioration (PSD) increments with PM₁₀ increments.

Air toxics control programs will continue and states will also continue to submit sulfur dioxide (SO₂) SIP revisions for individual sources. Permits for new sources will continue to be issued and states will continue to conduct inspections and enforcement actions in the area of asbestos demolition and renovation (D&R).

Also, in 1990 states will continue to carry out activities essential to

the operation and maintenance of effective air pollution regulatory programs. This includes the implementation of source surveillance and compliance programs aimed at assuring initial and continuous compliance by stationary sources with SIP requirements, New Source Performance Standards (NSPSs), and National Emission Standards for Hazardous Air Pollutants (NESHAPs). States will operate the National Air Monitoring System (NAMS) networks and maintain quality assurance programs providing data on air quality levels, trends, and attainment status. States will continue to assume responsibility for the implementation of newly promulgated NSPSs and for the review and permitting of new sources, including those to which PSD requirements apply.

Resources will continue to be used to support the provision of specialized training of persons involved in abatement and air pollution control at the state and local level.

1989 Program

In 1989 the Agency is allocating a total of \$101,500,000, all of which is from the Abatement, Control and Compliance appropriation.

In 1989 a major focus of the control agency support program is the implementation of the post-1987 attainment strategy for ozone and CO. Efforts initiated in 1988 for correcting and modifying existing regulations, control measures, programs, and procedures, including the efforts to expand the inspection and improve the compliance of Class A and B volatile organic compound (VOC) sources, are continuing. A major initiative to prepare base-year emissions inventories in ozone and CO nonattainment areas will commence. States are working on revisions to their SIPs required by EPA's May, 1988 SIP call. States are also analyzing the effectiveness of current VOC control programs in order to correct these programs as necessary. Efforts within the Northeast to apply the regional ozone model to identify transport and assess control options over large areas continue. Efforts are underway to improve baseline inventories and collect nonmethane organic compound (NMO) data.

State and local agencies are continuing to implement various elements of their multi-year plans for building and implementing programs for assessing and reducing exposure to air toxics. Efforts within urban areas are moving toward identifying and implementing specific measures to mitigate urban exposures and toward expanding the number of state/local initiated actions. To maximize the potential mitigation of exposure to air toxics, state and local agencies are expanding efforts to identify and integrate air toxics considerations into current programs for the review and permitting of new sources and regulatory programs for both ozone and PM₁₀. States are continuing to prepare required PM₁₀ SIPs for Group I areas. In addition, states are performing necessary analyses and preparing SIPs for Group II areas where nonattainment problems have been identified. Programs to establish the required PM₁₀ ambient monitoring network will be completed. States continue to operate SO₂ monitoring networks and inspect major SO₂ sources. State PSD and NSR programs are also continuing.

States are also carrying out inspection and source monitoring programs for assuring initial and continuous compliance by all major stationary sources, including timely and appropriate responses to violations. Emphasis continues on identifying contractors that violate the asbestos D&R regulations and

taking appropriate follow-up action. In addition, states are continuing to fully operate and monitor the quality of the NAMS/SLAMS networks and to assume responsibility for newly promulgated NSPSs and National Emission Standards for Hazardous Air Pollutants (NESHAPs).

In 1989 resources have been made available to support specialized training for persons involved in abatement and air pollution control at the state and local level. These resources are being used to fund training course and workshops, develop new courses, and revise some existing courses. Approximately 35 short courses are scheduled which will address enforcement, air toxics, SIP processing, ambient monitoring, and basic principles of air pollution control.

1988 Accomplishments

In 1988 the Agency obligated a total of \$94,164,000 all of which was from the Abatement, Control and Compliance appropriation.

In 1988 major priorities were: continued implementation of the June 1985 Air Toxics Strategy; implementation of elements of the post-1987 ozone/CO strategy calling for correction and enhancement of existing programs in urban areas not meeting the 1987 attainment deadline; and continuation of activities to implement the NAAQS for PM₁₀.

In 1988 states carried out key elements of the multi-year plans for the enhancement and implementation of air toxics programs consistent with the Air Toxics Strategy. Principal activities included the enforcement of existing NESHAPs, including compliance with the asbestos demolition and renovation requirements; the improvement of assessment capabilities and data bases needed to manage air toxics risks; the continuation of state programs for evaluating and mitigating exposures from specific non-NESHAPs point sources causing individual risk; and the assessment of complex multi-pollutant/source air toxics problems within the largest urbanized areas of the country. A limited number of states developed final regulations for the control of air toxics point sources.

States began taking action in response to notifications of ozone/CO SIP inadequacies and to calls for development of corrective SIPs in areas that do not meet the December 1987 attainment deadline. The action included steps to prepare baseline inventories; correct identified deficiencies in existing regulations; adopt reasonably available control technology (RACT) regulations as required; improve inspection/compliance activities for sources of VOCs; and correct identified deficiencies in operating vehicle inspection/maintenance (I/M) programs.

States continued to: establish ambient monitoring networks within the more significant PM₁₀ areas; update PM₁₀ emission inventories necessary for preparation of required SIPs; and develop the required SIPs for Group I areas as well as Group II areas with violations.

TRAINING

1990 Program Request

The Agency requests a total of \$259,100 supported by 4.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$6,400 for the Salaries and Expenses appropriation, and no change in total workyears from 1989.

In 1990 the Agency will continue to manage its program of training persons involved in abatement and air pollution control at the state and local level. In addition to providing self-instructional training, the program will develop, update, and revise short courses. Technical support will also be provided to states and Regions planning specialty workshops and training courses.

1989 Program

In 1989 the Agency is allocating a total of \$252,700 supported by 4.0 total workyears to this program, all of which is from the Salaries and Expenses appropriation.

In 1989 the Agency is providing a self-study training program, with major emphasis on the development of self-instructional training courses in the areas of size-specific particulate matter (PM₁₀), post-1987 attainment of National Ambient Air Quality Standards (NAAQSs), and permitting. New short courses are being developed. Existing courses provided through the seven Area Training Centers (ATCs) are being updated and revised. The Agency is also providing technical support to states and Regions planning workshops and training courses.

1988 Accomplishments

In 1988 the Agency obligated a total of \$269,100 supported by 4.3 total workyears, all of which was from the Salaries and Expenses appropriation.

In 1988 self-instructional training to persons involved in air pollution control at the state and local level was provided, courses were updated by staff on a limited basis, and technical support was provided to states and Regions which provided funding for specialty workshops and training courses.

AIR
Air Quality Management Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Air Quality Management
Implementation

Salaries & Expenses	\$12,529.1	\$12,538.4	\$12,428.3	\$12,955.2	\$526.9
Abatement Control and Compliance	\$300.2	\$294.6	\$323.2	\$323.2	
TOTAL	\$12,829.3	\$12,833.0	\$12,751.5	\$13,278.4	\$526.9

TOTAL:

Salaries & Expenses	\$12,529.1	\$12,538.4	\$12,428.3	\$12,955.2	\$526.9
Abatement Control and Compliance	\$300.2	\$294.6	\$323.2	\$323.2	

Air Quality Management Implementation TOTAL	\$12,829.3	\$12,833.0	\$12,751.5	\$13,278.4	\$526.9
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PERMANENT WORKYEARS

Air Quality Management Implementation	269.5	272.1	271.0	288.7	17.7
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TOTAL PERMANENT WORKYEARS	269.5	272.1	271.0	288.7	17.7
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TOTAL WORKYEARS

Air Quality Management Implementation	289.7	288.3	287.2	288.7	1.5
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TOTAL WORKYEARS	289.7	288.3	287.2	288.7	1.5
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Air Quality Management Implementation

Budget Request

The Agency requests a total of \$13,278,400 supported by 288.7 total workyears for 1990, an increase of \$526,900 and 1.5 total workyears from 1989. Of the request, \$12,955,200 will be for the Salaries and Expenses appropriation and \$323,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of \$526,900 and no change in the Abatement, Control and Compliance appropriation.

AIR QUALITY MANAGEMENT IMPLEMENTATION1990 Program Request

The Agency requests a total of \$13,278,400 supported by 288.7 total workyears for this program, of which \$12,955,200 will be for the Salaries and Expenses appropriation and \$323,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$526,900 for the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation, and an increase of 1.5 in total workyears from 1989. The increases reflect increased personnel and support costs, as well as additional support for ozone/carbon monoxide (CO) State Implementation Plan (SIP) processing.

In 1990 the ten EPA Regional Offices will continue to implement measures to achieve attainment of the ozone and CO air quality standards. Guidance will be provided to states in a number of areas including the correction of existing stationary and mobile source regulations and programs, the application of procedures and techniques for determining required emission reductions, the evaluation and selection of control measures, and the preparation of attainment demonstrations. Ongoing control programs will be reviewed for effectiveness and SIPs will be reviewed as they are submitted.

In addition, Regions will continue to provide guidance to states on the development and submission of SIPs to implement the size-specific particulate matter (PM₁₀) National Ambient Air Quality Standard (NAAQS), and PM₁₀ SIPs will be reviewed as they are submitted. The Regions will assist states in developing SIP revisions that will replace total suspended particulates (TSP) for Prevention of Significant Deterioration (PSD) reviews with PM₁₀. State and local programs to control air toxics will be supported, including those efforts to control high-risk point sources and to mitigate high-risk urban impacts. Sulfur dioxide (SO₂) SIP revisions will be reviewed as they are submitted. A number of other ongoing air quality management activities will be continued including review/oversight of the air grants process,

implementation of the national air audit system, support to litigation activities, and support to state new source review (NSR)/PSD programs. As a result of litigation, the need to develop Federal Implementation Plans (FIPs) is expected to continue.

1989 Program

In 1989 the Agency is allocating a total of \$12,751,500 supported by 287.2 total workyears to this program, of which \$12,428,300 is from the Salaries and Expenses appropriation and \$323,200 is from the Abatement, Control and Compliance appropriation.

A major focus of the Regional air quality management program is the implementation of the post-1987 strategy for correcting ozone and CO nonattainment problems. The efforts to correct and improve existing regulations, control measures, programs, and procedures continue in 1989. Regions are providing detailed, hands-on assistance to those areas with the most serious problems to complete the required revisions to the SIPs on schedule. Regions have begun to review state submitted revisions and will initiate appropriate rulemaking. Efforts to apply the Regional ozone model in the Northeast will also continue.

The Regions continue to implement a number of other air quality management programs. These include reviewing and taking rulemaking action on state-submitted SIP revisions for PM₁₀, assisting state and local agencies in implementing their multi-year development plans for improving and carrying out air toxics control programs, reviewing and taking rulemaking action on state initiated SO₂ SIP revisions, and performing other functions, such as managing the air grants process, implementing the National Air Audit System, and assisting states in the implementation of the programs for PSD and NSR.

1988 Accomplishments

In 1988 the Agency obligated a total of \$12,829,300 supported by 289.7 total workyears, of which \$12,529,100 was from the Salaries and Expenses appropriation and \$300,200 was from the Abatement, Control and Compliance appropriation.

In 1988 the major priorities were assisting and overseeing state programs for correction of existing SIPs and control measures in areas not meeting the 1987 attainment deadline for the ozone/CO NAAQSs; implementation of the NAAQS for PM₁₀; and continued implementation of the June 1985 National Air Toxics Strategy.

Consistent with the post-1987 ozone/CO strategy, Regions notified states of needed revisions to current SIPs; provided guidance on developing these revisions; and worked with states to update baseline inventories. Regions continued working with states in the Northeast corridor and Mid-Atlantic region to employ the regional oxidant model where intercity transport will require controls over large geographic areas. Major guidance and support was also provided to help states complete SIPs to meet the NAAQS for PM₁₀.

Programs were undertaken to help states implement multi-year plans for improving and conducting air toxics programs. Efforts focused on helping

states to improve assessment capabilities and data bases to manage air toxics risks; improve efforts in the agencies having plan commitments to evaluate and mitigate exposures from non-NESHAPs point sources with high individual risk; and complete initial screening programs to identify and assess complex air toxics problems within large urban areas.



AIR
Trends Monitoring and Progress Assessment

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Ambient Air Quality
Monitoring

Salaries & Expenses	\$3,823.4	\$3,859.2	\$3,803.5	\$4,041.4	\$237.9
Abatement Control and Compliance	\$190.7	\$114.2	\$122.8	\$122.8	
TOTAL	\$4,014.1	\$3,973.4	\$3,926.3	\$4,164.2	\$237.9

Air Quality & Emission
Data Management &
Analysis

Salaries & Expenses	\$3,636.1	\$3,746.6	\$4,241.6	\$4,470.4	\$228.8
Abatement Control and Compliance	\$1,594.3	\$3,599.4	\$4,169.4	\$6,669.4	\$2,500.0
TOTAL	\$5,230.4	\$7,346.0	\$8,411.0	\$11,139.8	\$2,728.8

TOTAL:

Salaries & Expenses	\$7,459.5	\$7,605.8	\$8,045.1	\$8,511.8	\$466.7
Abatement Control and Compliance	\$1,785.0	\$3,713.6	\$4,292.2	\$6,792.2	\$2,500.0

Trends Monitoring &
Progress Assessment

TOTAL	\$9,244.5	\$11,319.4	\$12,337.3	\$15,304.0	\$2,966.7
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PERMANENT WORKYEARS

Ambient Air Quality
Monitoring

	81.5	81.5	80.2	86.2	6.0
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Air Quality & Emission
Data Management &
Analysis

	65.0	70.6	80.5	80.5	
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TOTAL PERMANENT WORKYEARS

	146.5	152.1	160.7	166.7	6.0
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AIR
Trends Monitoring and Progress Assessment

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Ambient Air Quality Monitoring	87.8	87.5	86.2	86.2
Air Quality & Emission Data Management & Analysis	66.6	70.6	80.5	80.5
TOTAL WORKYEARS	154.4	158.1	166.7	166.7

Trends Monitoring and Progress Assessment

Budget Request

The Agency requests a total of \$15,304,000 supported by 166.7 total workyears for 1990, an increase of \$2,966,700 and no change in total workyears from 1989. Of the request, \$8,511,800 will be for the Salaries and Expenses appropriation and \$6,792,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of \$466,700 and an increase of \$2,500,000 in the Abatement, Control and Compliance appropriation.

AMBIENT AIR QUALITY MONITORING1990 Program Request

The Agency requests a total of \$4,164,200 supported by 86.2 total workyears for this program, of which \$4,041,400 will be for the Salaries and Expenses appropriation and \$122,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$237,900 for the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation, and no change in total workyears from 1989. The increase will support increased personnel and support costs and upgrading the capacity of EPA Regional laboratories.

In 1990 the ten EPA Regional Offices will continue overview and management of state air monitoring programs, including: grants review; coordination of emission and air quality data bases; and validation of data from the National Air Monitoring System (NAMS) and the State and Local Air Monitoring System (SLAMS) data base. Data analyses including air quality trend information will be developed to be used as input to the Regional Trend Reports.

In the area of quality assurance, significant resources will be used for on-site systems audits of state networks and monitors. In addition, the Regional laboratories will continue to participate in the national air audit program. Size-specific particulate matter (PM₁₀) monitors established during 1989 will be reviewed and visited to verify compliance with EPA air monitoring regulations. Reviews of PM₁₀ ambient data and sampling frequency will continue at a high level to support determinations on attainment and on possible control strategies in additional areas.

Regional implementation of the Toxics Air Monitoring System (TAMS) network will involve coordinating operational improvements with the Office of Research and Development and state and local agencies. Resources will also be used to provide monitoring/quality assurance support and technical assistance

to states in evaluating the source impact of specific toxic air pollutants from sources considered for regulation under state control programs. Support for state and local toxics efforts in urban areas will continue with management, coordination, and technical assistance provided to complete or refine toxics emission data bases and to improve state and local ambient monitoring capabilities.

Technical oversight and support will be provided to state and local programs developing post-1987 data bases in ozone and carbon monoxide (CO) areas including limited coordination of the periodic nonmethane organic compounds (NMOC)/nitrogen oxides (NO_x) sampling programs and minimal oversight of revisions to the CO and ozone ambient networks.

1989 Program

In 1989 the Agency is allocating a total of \$3,926,300 supported by 86.2 total workyears to this program, of which \$3,803,500 is from the Salaries and Expenses appropriation and \$122,800 is from the Abatement, Control and Compliance appropriation.

In 1989 TAMS is being operated at three sites in Boston, Houston, and Chicago and at a single site in Seattle. The SLAMS network operated by state and local agencies is being reviewed and an assessment of equipment needs for ozone/CO is being made. The Regions are continuing to work with states in identifying and eliminating air monitoring sites that have marginal utility. The Regions are continuing their programs of on-site visits to review/audit NAMS (and a small percentage of SLAMS) and to review laboratories for proper operating and quality assurance procedures. The validation, management, and coordination of state and local air quality and emission data bases before they are submitted to EPA's central data bank are continuing. The Regions continue to have an active role in overseeing the establishment of state and local sampling networks for PM₁₀.

As part of their oversight of ongoing PM₁₀ sampling programs, the Regions are active in reviewing and interpreting ambient data and in coordinating state adjustments to sampling frequency at sites experiencing exceedances of the PM₁₀ National Ambient Air Quality Standard (NAAQS). To support the development of post-1987 ozone State Implementation Plans (SIPs), Regional efforts to improve the quality and timeliness of ambient and emission data bases have increased. Quality assurance activities and state audits are continuing, and strong emphasis on the National Air Audit System is also being continued.

1988 Accomplishments

In 1988 the Agency obligated a total of \$4,014,100 supported by 87.8 total workyears, of which \$3,823,400 was from the Salaries and Expenses appropriation and \$190,700 was from the Abatement, Control and Compliance appropriation.

In 1988 the Regional Offices coordinated the collection, validation, and submission of ambient data necessary to support EPA actions calling for revised SIPs for ozone and CO. In addition, the Regions assisted states in preparing draft network plans for ambient monitoring of PM₁₀ and developing

revisions necessary to meet EPA requirements. The Regions also assisted 62 state and local agencies in assessing potential risks from toxic pollutants through ambient sampling and 51 agencies in developing emission inventories.

AIR QUALITY AND EMISSION DATA MANAGEMENT AND ANALYSIS

1990 Program Request

The Agency requests a total of \$11,139,800 supported by 80.5 total workyears for this program, of which \$4,470,400 will be for the Salaries and Expenses appropriation and \$6,669,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$228,800 for the Salaries and Expenses appropriation, an increase of \$2,500,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears from 1989. The increase will support improvements to urban scale models for ozone, a center for support of PM₁₀ modeling, development of PM₁₀ emission factors, software to analyze ozone and CO SIP progress, and development of 1990 inventories for regional strategy analyses.

The existing Aerometric Information Retrieval System (AIRS) Air Quality Subsystem will be maintained and guidance provided to users. Access will be provided to three to five additional states. New software to support high priority ozone, CO and PM₁₀ analyses will be developed. The AIRS Facility Subsystem will be maintained, guidance provided, and access provided to 12 additional states.

Implementation of the Agency's toxic monitoring strategy will continue. Support to the post-1987 CO and ozone program will continue with management of regional ozone modeling of the Northeast, management of NMOC monitoring, technical guidance on monitoring networks and on data bases needed for attainment demonstrations, and consultation with agencies on the use of grid (Airshed) models for ozone attainment demonstrations in major urban areas.

Initiatives will be undertaken to actively support development, storage, and quality assurance of the 1990 National Acid Precipitation Assessment Program (NAPAP) emission inventory and to develop special AIRS software to track, summarize, and display air quality and emission data relating to ozone and CO regulatory programs. A program will be initiated to develop an official version of the Urban Airshed Model for regulatory use and to support application of the model for ozone analyses in six nonattainment areas. Active support of Headquarters, Regional, and state/local modeling of both NAAQS and toxics pollutants will be continued as will on-going efforts to evaluate model accuracy and provide refined models.

Emission testing support will continue with more emphasis on technical support to state and local agencies. The program will also continue to prepare analyses of ambient and emission trends, issue status and trends reports, and provide national oversight of SIP ambient monitoring. Technical support of Regional Office and state programs for PM₁₀ monitoring, inventories, and modeling will also be continued.

An initiative will be undertaken to fill gaps existing in the PM₁₀

emission factor data base through emission tests of eight to 12 source categories identified as significant particulate emitters in Group I areas. The emission factor clearinghouse will actively support Regions and states in applying the best factors available and in developing or estimating source specific factors. Also, a center will be established to support PM₁₀ model users on data bases, model documentation, and application of dispersion and receptor modeling techniques to traditional and non-traditional source categories.

1989 Program

In 1989 the Agency is allocating a total of \$8,411,000 supported by 80.5 total workyears to this program, of which \$4,241,600 is from the Salaries and Expenses appropriation and \$4,169,400 is from the Abatement, Control and Compliance appropriation.

In 1989 the program is focusing on four priority areas: (1) providing active support to the Regional Offices and to an expanding number of state users of the AIRS Air Quality Subsystem; (2) completing basic software for the Facility Subsystem of AIRS and providing training, documentation, and system access to the Regions and six states; (3) providing guidance and consultation on techniques required to assess attainment of the NAAQS for PM₁₀, revising ambient networks and sampling frequencies, applying models for SIP analyses and developing and applying emission factors to the PM₁₀ SIP inventories; and (4) broadly supporting Regional Office and state efforts relating to future CO and ozone SIP revisions, including: the review of ambient networks, the development of technical and procedural guidance for preparing emission inventories, the provision of assistance in preparing data bases needed to apply models, and continuation of the multi-year project to assess the regional transport of ozone and precursors in the Northeast.

Technical analyses to support reviews of the NAAQSs for ozone and lead are continuing. The air toxics program includes continued implementation of the ambient monitoring strategy with oversight of the TAMS network in four cities and analyses of ambient levels for selected toxic compounds. Emission factors and guidance on emission inventories will be issued to support SIP inventories for PM₁₀ and ozone/CO. Guidance is being furnished to Regional Offices and state/local agencies on applying models to provide screening estimates of air quality for toxic pollutants. Additional software for the Air Quality Subsystem is being developed and access is being provided to 12-15 more agencies. The evaluation and refinement of dispersion models continues as does support and guidance on model application for all NAAQS pollutants and for those pollutants under assessment for possible regulation under the Clean Air Act. Emission testing support is being provided to Headquarters offices responsible for developing or revising emission standards and limited technical support is provided to state/local agencies in applying test methods used in SIP compliance and for non-routine tests. The program is continuing to analyze ambient and emission trends for NAAQS pollutants, prepare various status and trends reports, and provide national oversight of SIP ambient monitoring.

1988 Accomplishments

In 1988 the Agency obligated a total of \$5,230,400 supported by 66.6 total

workyears, of which \$3,636,100 was from the Salaries and Expenses appropriation and \$1,594,300 was from the Abatement, Control and Compliance appropriation.

In 1988 emphasis continued on providing training and specialized conversion assistance to Regions and establishing full access to the AIRS Air Quality Subsystem for 19 additional states. The software design phase was completed for the new AIRS subsystem which will store and retrieve emissions and compliance data. Other major activities included: publication and distribution of final rulemaking to revise EPA's Air Modeling Guideline; publication of the Air Quality and Emissions Trends Report for 1986 data; and publication of a major supplement to EPA's Compilation of Air Pollutant Emission Factors. The emissions program concentrated on providing technical support to Regions and states in the application of PM and other factors, and preparing proposed technical guidance and requirements for the development of emission inventories for post-1987 SIPs for ozone and CO.



Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>AIR</u>	2-1
ENFORCEMENT	
Stationary Source Enforcement	2-60
Mobile Source Enforcement	2-65



AIR
Stationary Source Enforcement

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Stationary Source
Enforcement

Salaries & Expenses	\$12,381.4	\$13,308.2	\$13,255.6	\$13,754.5	\$498.9
Abatement Control and Compliance	\$2,900.0	\$3,180.1	\$3,155.7	\$4,625.7	\$1,470.0
TOTAL	\$15,281.4	\$16,488.3	\$16,411.3	\$18,380.2	\$1,968.9

TOTAL:

Salaries & Expenses	\$12,381.4	\$13,308.2	\$13,255.6	\$13,754.5	\$498.9
Abatement Control and Compliance	\$2,900.0	\$3,180.1	\$3,155.7	\$4,625.7	\$1,470.0

Stationary Source Enforcement	TOTAL	\$15,281.4	\$16,488.3	\$16,411.3	\$18,380.2	\$1,968.9
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PERMANENT WORKYEARS

Stationary Source Enforcement	285.6	296.2	294.1	311.8	17.7
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TOTAL PERMANENT WORKYEARS	285.6	296.2	294.1	311.8	17.7
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TOTAL WORKYEARS

Stationary Source Enforcement	302.6	314.4	311.8	311.8
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TOTAL WORKYEARS	302.6	314.4	311.8	311.8
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Stationary Source Enforcement

Budget Request

The Agency requests a total of \$18,380,200 supported by 311.8 total workyears for this program, of which \$13,754,500 will be for the Salaries and Expenses appropriation and \$4,625,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$498,900 for the Salaries and Expenses appropriation, an increase of \$1,470,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears from 1989.

STATIONARY SOURCE ENFORCEMENT1990 Program Request

The Agency requests a total of \$18,380,200 supported by 311.8 total workyears for this program, of which \$13,754,500 will be for the Salaries and Expenses appropriation and \$4,625,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$498,900 for the Salaries and Expenses appropriation, an increase of \$1,470,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears from 1989. The increase will support implementation of strategies for asbestos demolition and renovation as well as ensuring credibility in certification of woodstove production lines.

In 1990 the ten EPA Regional Offices will continue their compliance monitoring and enforcement efforts to ensure (in concert with states) compliance with State Implementation Plans (SIPs), new source performance standards (NSPS), and National Emission Standard for Hazardous Air Pollutants (NESHAPs). The focus of the program will be on addressing sources in nonattainment areas, with particular emphasis on volatile organic compound (VOC) sources in ozone nonattainment areas and toxic air pollutant sources. Implementation of strategies for the NESHAP program for asbestos demolition and renovation (D&R) will continue, as will initiatives to enforce the other NESHAP standards. Also continued will be a comprehensive program to determine the effectiveness of VOC rules, implementation of the compliance monitoring and inspection targeting program to ensure better utilization of inspection resources, and workshop and technical support activities directed at improving compliance efforts in ozone nonattainment areas. The initiative to enhance VOC compliance in ozone nonattainment, including addressing small VOC sources, will be continued.

In the area of size-specific particulate matter (PM₁₀), the Regions will review proposed PM₁₀ SIPs for enforceability and efforts will be initiated to ensure compliance by sources subject to newly promulgated PM₁₀ SIPs. Enforcement of continuous emission monitoring (CEM) requirements of sulfur

dioxide (SO₂) sources will also continue.

In 1990 EPA Headquarters will continue to participate in the development of policy guidance, planning, and budgeting activities, and the review of selected Regional activities and program performance. Headquarters will also assure the enforceability of proposed Agency regulations under NSPS, NESHAP, and Prevention of Significant Deterioration (PSD) programs; respond to formal inquiries; manage the Compliance Data System (CDS) and the compliance portion of the Aerometric Information Retrieval System (AIRS); manage the level of effort contract; and conduct technical studies. Headquarters will continue to implement the technical agenda by developing jointly with the Regions a planned list of technical projects to be initiated in 1990. In addition, the program will assure the successful implementation of the revised Asbestos Renovation and Demolition Strategy. Additional resources will be used to hire Senior Environmental Personnel who will collect and distribute notification, inspection and compliance information across EPA Regional programs and to Headquarters.

During 1990 EPA Headquarters will ensure enhanced VOC compliance by providing VOC technical and training support to the Regions and state agencies, issuing policy guidance, monitoring compliance and enforcement activities, and overseeing the implementation of the rule effectiveness protocol. In addition, Headquarters will continue implementing the laboratory program for woodstove testing, review of applications for woodstove certification, monitoring certification tests, certifying production lines, and conducting parameter inspections and random compliance audits. Approximately 250 woodstove production lines will be certified during 1990.

Headquarters will review proposed PM₁₀ SIPs for national enforceability issues. Evaluating the effectiveness of state and EPA compliance monitoring and inspection programs will continue to be a major activity in 1990, as will promoting the use of and developing national guidance for CEM requirements. In addition, Headquarters will provide implementation guidance and oversight to the Regions and to producers, importers, and exporters of chlorofluorocarbons and halons.

1989 Program

In 1989 the Agency is allocating a total of \$16,411,300 supported by 311.8 total workyears to this program, of which \$13,255,600 is from the Salaries and Expenses appropriation and \$3,155,700 is from the Abatement, Control and Compliance appropriation.

In 1989 the Regional Office air compliance program continues to monitor and ensure the compliance of the 26,500 largest stationary SIP sources, the 2,500 NSPS sources, and the 1,000 nontransitory NESHAP sources. Implementation of the NESHAP program for asbestos D&R addressing approximately 8,000 contractors and 60,000 notifications also continues.

Major activities include continuing the initiative to enhance VOC source compliance in ozone nonattainment areas, implementing a comprehensive program to determine whether adopted VOC measures are being effectively implemented and conducting VOC compliance workshops to improve the quality of inspections. Efforts to help state and local air pollution agencies and improve their

technical capabilities also continues. Other activities in 1989 include ensuring no backsliding from existing total suspended particulate (TSP) requirements during the development of PM₁₀ SIPs and ensuring SO₂ sources meet, where applicable, continuous emission monitoring requirements. Federal enforcement actions, where required, focus on violating sources in nonattainment areas, with particular emphasis on VOC sources and on enforcing regulations at toxic air pollutant sources. EPA works closely with states in this effort through implementation of Agency guidance on "timely and appropriate" enforcement actions. Technical support is provided to the ongoing litigation docket.

In 1989 EPA Headquarters continues to provide oversight of the Regional programs to ensure national consistency and effectiveness through a combination of comprehensive programmatic review and review of certain classes of enforcement actions. This program also continues to assure the enforceability of proposed EPA regulations, manage the CDS (including CDS activities related to the development of the new AIRS Facility Subsystem); manage the level of effort contract support program; develop technical and program guidance; and conduct planning and budgeting activities.

In 1989 a major activity is implementation of the compliance monitoring and inspection targeting strategy which will allow Regional Offices and state agencies to better utilize their inspection resources. Implementation of the NSPS woodstoves program is continuing, including the review of applications for woodstoves certification, the monitoring of certification tests, and the evaluation of test results. The program to enhance VOC compliance is also continuing in 1989. Headquarters continues oversight and evaluation of Regional and state efforts to implement enhanced VOC compliance monitoring and inspection activities, the rule-effectiveness assessments, and the small VOC source strategy. Also, Headquarters is developing a comprehensive VOC training program and compliance determination guides for selected categories of VOC sources. Work to promote use of CEM requirements, including support for Regional and state efforts, also continues to be a major activity..

1988 Accomplishments

In 1988 the Agency obligated a total of \$15,281,400 supported by 302.6 total workyears, of which \$12,381,400 was from the Salaries and Expenses appropriation and \$2,900,000 was from the Abatement, Control and Compliance appropriation.

In response to a need to improve the compliance program, a number of major guidance documents and policies were issued in 1988. Implementation programs were initiated to improve the success of these new approaches. The three most important documents were: (1) the Compliance Monitoring Strategy which changes the process used by states and Regions to determine their inspection program for a given fiscal year or grant period. This guidance will permit agencies to target inspection resources into areas that present the greatest environmental or compliance problems; (2) the Asbestos Demolition and Renovation Activity Strategy which focuses the compliance program on individual contractor performance rather than on notification of activities. The strategy recommends inspection procedures, identifies tracking activities to target recalcitrant contractors, and encourages states to adopt training and certification programs; (3) the Rule Effectiveness Protocol which outlines a

procedure for determining the effectiveness of rules, particularly for VOC sources. This is important in non-attaining areas where emission reductions will be very difficult to achieve.

AIR
Mobile Source Enforcement

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Mobile Source Enforcement					
Salaries & Expenses	\$5,346.1	\$5,411.2	\$5,377.5	\$6,021.3	\$643.8
Abatement Control and Compliance	\$1,890.8	\$2,309.6	\$2,179.2	\$3,479.2	\$1,300.0
TOTAL	\$7,236.9	\$7,720.8	\$7,556.7	\$9,500.5	\$1,943.8
TOTAL:					
Salaries & Expenses	\$5,346.1	\$5,411.2	\$5,377.5	\$6,021.3	\$643.8
Abatement Control and Compliance	\$1,890.8	\$2,309.6	\$2,179.2	\$3,479.2	\$1,300.0
Mobile Source Enforcement TOTAL	\$7,236.9	\$7,720.8	\$7,556.7	\$9,500.5	\$1,943.8
PERMANENT WORKYEARS -----					
Mobile Source Enforcement	99.6	105.6	104.8	113.8	9.0
TOTAL PERMANENT WORKYEARS	99.6	105.6	104.8	113.8	9.0
TOTAL WORKYEARS -----					
Mobile Source Enforcement	104.4	105.6	104.8	113.8	9.0
TOTAL WORKYEARS	104.4	105.6	104.8	113.8	9.0



Mobile Source Enforcement

Budget Request

The Agency requests a total of \$9,500,500 supported by 113.8 total workyears for this program, of which \$6,021,300 will be for the Salaries and Expenses appropriation and \$3,479,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$643,800 in the Salaries and Expenses appropriation, an increase of \$1,300,000 in the Abatement, Control and Compliance appropriation, and an increase of 9.0 total workyears.

MOBILE SOURCE ENFORCEMENT1990 Program Request

The Agency requests a total of \$9,500,500 supported by 113.8 total workyears for this program, of which \$6,021,300 will be for the Salaries and Expenses appropriation and \$3,479,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$643,800 in the Salaries and Expenses appropriation, an increase of \$1,300,000 in the Abatement, Control and Compliance appropriation, and an increase of 9.0 total workyears. The increases reflect the additional resources needed to implement the Agency's ozone control strategy, through enforcement of the vehicle fuel volatility rules, and to implement a heavy-duty enforcement program.

In support of the ozone control policy, the recall program will investigate 23 suspect light-duty vehicle classes together with carrying out related diagnostic evaluation and remedy development work. A heavy-duty recall program will be implemented to assess the effectiveness of more stringent emission standards. The program will investigate three heavy-duty engine classes. Investigations of light-duty trucks will also continue. An estimated seven emissions waiver requests from the State of California will be processed. Investigations into the operations of importers of non-conforming vehicles will continue in order ensure that the certification procedures are adequately implemented. The Selective Enforcement Audit (SEA) program will conduct ten audits of light-duty vehicle manufacturer facilities, five audits of heavy-duty manufacturer facilities, and four production compliance audits in support of the nonconformance penalties (NCP) program to ensure that new production vehicles and engines meet emissions and NCP requirements.

The field enforcement program will consist of inspections of vehicle fueling facilities as well as the investigation of suspected tampering and misfueling incidents. The fuels inspection effort will continue the program of sampling fuels for alcohol and other fuel additives to ensure that legal limits are not exceeded. Lead phasedown enforcement (to ensure that refineries, importers and distributors are complying with the lead phasedown rules) will involve 15 audits and an active caseload of approximately 30 major

violations. A total of 450 tampering investigations will result in approximately 75 notices of violation. Audits of the incidence of tampering and fuel switching will be carried out at 15 sites primarily to gauge the effectiveness of the anti-tampering programs being implemented by state and local jurisdictions. EPA will continue to assist with the development of state and local programs aimed at preventing tampering and fuel switching. It is anticipated that nine new programs will be implemented, thus bringing the total to 54. The fuel volatility program will provide for 10,000 inspections of retail fuel outlets, refiners, and distributors to ensure that fuels meet volatility standards. These inspections are expected to lead to the prosecution of approximately 500 violations of the volatility limits.

1989 Program

In 1989 the Agency is allocating a total of \$7,556,700 supported by 104.8 total workyears for this program, of which \$5,377,500 is from the Salaries and Expenses appropriation and \$2,179,200 is from the Abatement, Control and Compliance appropriation.

The recall program is continuing with the investigation of 23 suspect light-duty classes, together with related diagnostic evaluation and remedy development work. An estimated seven emissions waiver requests from the State of California are being processed. The implementation of the regulatory revisions to the imports program continues. The program is processing an estimated 8,000 applications for importation of nonconforming vehicles. The SEA program is shifting focus by conducting 10 audits of light-duty manufacturer facilities and five audits of heavy-duty manufacturer facilities to ensure that new production vehicles and engines meet emission requirements. Four Production Compliance Audits will be completed. Approximately 1,800 consumer inquiries on emission warranty issues will be answered. The anti-tampering and anti-fuel switching enforcement programs are expected to result in 400 notices of violations of which approximately 34 cases will be referred to the Department of Justice for prosecution. Audits of tampering and fuel switching are being carried out at 15 sites. EPA is continuing to assist with the development of state and local programs aimed at preventing tampering and fuel switching. It is anticipated that three new programs will be implemented, thus bringing the total to 45.

1988 Accomplishments

In 1988 the Agency obligated \$7,236,900 supported by 104.4 total workyears for this program, of which \$5,346,100 was from the Salaries and Expenses appropriation and \$1,890,800 was from the Abatement, Control and Compliance appropriation.

Under the recall program, 23 light-duty vehicle investigations were conducted resulting in one ordered recall affecting nearly 500,000 vehicles. An additional 10 influenced and 23 voluntary recalls, completed as a result of EPA investigations, affected over 3.6 million vehicles. Eight California waivers were issued. The SEA program conducted seven audits of light-duty manufacturer facilities and four audits of heavy-duty manufacturer facilities to ensure that new production vehicles and engines meet emissions requirements. Three Production Compliance audits were conducted. Inquiries and applications for the importation of nonconforming vehicles continued with the processing of

15,000 applications.

The anti-tampering and anti-fuel switching enforcement program continued. Accomplishments included the establishment of seven new programs by states and localities; issuance of 367 notices of violation in the tampering and fuel switching programs; and evaluation of three fuel and fuel additive waiver requests. A study of the effects of the lead phasedown regulations on farm equipment was completed.

3. Water Quality

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>WATER QUALITY</u>	3-1
RESEARCH AND DEVELOPMENT	
Water Quality Research.	3-10
Scientific Assessment.	3-14
Monitoring Systems and Quality Assurance	3-15
Health Effects	3-17
Environmental Engineering and Technology	3-18
Environmental Processes and Effects.	3-19
Great Lakes.	3-20
ABATEMENT AND CONTROL	
Water Quality and Grants Program Management	3-22
Water Quality Management	3-24
Great Lakes Program.	3-26
Chesapeake Bay Program	3-28
Effluent Standards and Guidelines	3-31
Grants Assistance Programs.	3-34
Clean Lakes Program.	3-35
Control Agency Resource Supplementation (Section 106).	3-36
Water Quality Strategies Implementation	3-40
Wetlands Protection.	3-42
Ocean Disposal Permits	3-45
Environmental Emergency Response and Prevention.	3-47
Standards and Regulations.	3-48
Water Quality Monitoring and Analysis	3-51
Coastal Environment Management	3-53
Water Quality Monitoring and Analysis.	3-55
Municipal Source Control.	3-58
Municipal Waste Treatment Facility Construction.	3-60
Waste Treatment Operations and Maintenance	3-62
ENFORCEMENT	
Water Quality Enforcement	3-65
Water Quality Permit Issuance	3-69



WATER QUALITY

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$101,980.7	\$108,251.3	\$107,380.8	\$115,789.0	\$8,408.2
Abatement Control and Compliance	\$146,594.3	\$171,486.4	\$170,542.2	\$182,280.3	\$11,738.1
Research & Development	\$8,570.2	\$8,878.0	\$8,848.1	\$9,833.0	\$984.9
Scientific Activities Overseas	\$.8				
TOTAL, Water Quality	\$257,146.0	\$288,615.7	\$286,771.1	\$307,902.3	\$21,131.2

PERMANENT WORKYEARS	1,988.4	2,141.4	2,125.8	2,234.0	108.2
TOTAL WORKYEARS	2,151.1	2,236.2	2,219.5	2,234.0	14.5
OUTLAYS	\$268,124.2	\$281,887.6	\$280,095.0	\$303,722.7	\$23,627.7
AUTHORIZATION LEVELS	The Water Quality Act of 1987 reauthorized this program at a level of \$385,270.0 for 1988, \$410,270.0 for 1989, and \$410,270.0 for 1990.				



WATER

WATER QUALITY

OVERVIEW AND STRATEGY

The Clean Water Act, as amended; Marine Protection, Research and Sanctuaries Act; and the Marine Plastic Pollution Research and Control Act of 1987 provide the legislative basis for EPA's water quality programs. These laws direct EPA to take measures to protect the Nation's waters in order to safeguard public health, recreational uses, and aquatic life.

The Water Quality Act (WQA) of 1987, which amended the Clean Water Act (CWA), expanded and strengthened the CWA through a number of changes designed to enhance water quality and improve the well-defined partnership between the EPA and the states. The amended Act ratifies existing programs (e.g., technology-based and water quality-based effluent limits for point source dischargers). It also provides new tools to strengthen existing programs (e.g., mandatory controls for sewage sludge use and disposal and administrative penalties to streamline enforcement actions); establishes new approaches to address existing water pollution problems (e.g., new programs for control of nonpoint source pollution, stormwater and sludge); creates the state revolving loan funds program to replace construction grants; and mandates requirements to address existing and emerging problems (e.g., surface water toxic control programs). The WQA gives legislative recognition to three programs which impact near coastal waters: the National Estuary, Chesapeake Bay, and Great Lakes Programs.

The Marine Protection, Research and Sanctuaries Act is designed to protect the ocean from unregulated dumping of material that would endanger human health, public welfare, the marine environment, or economic potential. The Act authorizes the Agency to develop criteria for ocean disposal of industrial waste, municipal sludges, and other dredged materials. EPA is authorized to designate disposal sites and issue permits for all non-dredged materials through 1991. Recent amendments to the Act prohibit ocean dumping of sewage sludge and industrial wastes after December 31, 1991. The Corps of Engineers is responsible for issuing permits for dredged materials (not affected by the ban); however, EPA reviews these applications for consistency with EPA criteria.

The Marine Plastic Pollution Research and Control Act of 1987 implements Annex V of the International Convention for the Prevention of Pollution from Ships, 1973; and establishes programs to identify and reduce the effects of plastic pollution on the marine environment. Under this law, EPA is required to submit a report to Congress on methods to reduce plastic pollution; assist the National Oceanic and Atmospheric Administration in conducting a public education program; prepare a New York Bight Restoration Plan; and submit a report to Congress on the problems associated with plastic debris in the New York Bight.

Water quality programs in 1990 and beyond will focus on three major objectives: (1) building state and local capacity to protect high risk, critical habitats from pollution; (2) protecting the nation's surface waters from toxic and hazardous point discharges; and (3) maintaining the progress made to date in cleaning up and developing infrastructure to protect our surface waters. EPA will provide technical and financial assistance to the

states to carry out their increased base workload and meet new requirements.

Protect Critical Habitats and Valuable Ecosystems

State Clean Water Strategies (SCWS)

Since enactment of the Water Quality Act of 1987, EPA has encouraged states to develop integrated, targeted, and prioritized plans, referred to as State Clean Water Strategies, for addressing their overall water quality problems. EPA expects that about half of the states will elect to develop Strategies by the Fall of 1989. In 1990, EPA will continue to encourage and assist states with Strategy implementation through coordination of EPA program requirements; use of grant funds, technical assistance, guidance and information transfer for implementing Strategy components; and by making available expanded geographic-oriented data bases. In addition, EPA plans to use SCWS in selected state priority critical habitats to coordinate related EPA programs; leverage United States Department of Agriculture resources and policies (with special emphasis on problem pesticides); encourage innovative state and local approaches; and build public understanding of water quality issues.

Protecting Wetlands

Wetlands loss has a major impact on our environment, including adverse effects on species populations and the severity of flooding. In 1990, EPA will continue to emphasize a more active state role in wetlands protection through the development of state wetlands programs. Specifically, EPA will encourage state assumption of Section 404 permitting responsibilities and incorporation of wetland values into their Section 401 water quality certification process. EPA will continue to perform its Section 404 responsibilities with emphasis on more aggressive enforcement and the use of administrative penalties to address permit violations.

In 1990, EPA's wetland research program will conduct research to quantify the water quality functions of inland wetlands, to evaluate the sensitivity of wetlands to contaminants, to consider the adequacy of existing water quality criteria, to develop cumulative impact assessment procedures, and improve methods and guidance to mitigate wetland loss. Efforts will be directed toward developing methods for monitoring the ecological condition of the Nation's wetlands, and evaluating the potential use of man-made wetlands for treating wastewaters from small communities and acid mine drainage.

Near Coastal Waters and Oceans

EPA will place major emphasis on protecting and restoring the Nation's near coastal waters (NCW) and oceans. Near coastal waters activities will be increased to apply the national NCW assessment data to permitting and other regulatory and management programs. The Gulf of Mexico Initiative will be expanded to include a monitoring and data collection program to be used in evaluating the environmental health of the Gulf. In addition, the Agency will work with the Gulf States to initiate development of policy options under the Gulf Initiative's Framework for Action.

Using information derived from experience in the Great Lakes, Chesapeake Bay, other estuary projects, and near coastal pilot projects, EPA will expand a national network for information exchange about near coastal water problems, management tools, and innovative and successful management techniques. This

network is helping officials, especially local coastal zone managers, to make sound environmental decisions and use resources effectively.

In 1990, the National Estuary Program (NEP) will expand to include a total of sixteen estuary projects. The Agency will continue to support the twelve existing estuary projects, with the first of these projects moving into the implementation stage of its comprehensive plan. Four new projects will be selected and initiated on the basis of national significance, with priority consideration given to project sites referenced in the amended CWA. These four projects will expand the geographic coverage of the program, support the further development of project expertise, and apply and test remedial approaches developed in the earlier estuary projects.

In response to provisions of the 1987 Chesapeake Bay Agreement, EPA will continue a permit compliance initiative, undertake pesticides monitoring, and begin evaluating the effectiveness of nutrient control projects in preparation for the 1991 reassessment of the Bay Agreement. At the same time, the Great Lakes program will be addressing toxics problems as set forth in the 1987 U.S.-Canada Agreement by beginning three In-Place Pollutant Demonstration projects and adding the ship-board toxics analysis capability to its research vessel.

EPA will be continuing its involvement with the Corps of Engineers in the designation and management of dredged material disposal sites. The Agency will undertake more intensive sampling and testing to enhance the environmental impact studies prepared by the Corps and better assure compliance with EPA criteria. A number of Congressionally mandated projects focusing on the New York Bight -- the restoration plan, the Mud Dump site alternative, and the 106 mile site reassessment -- will be carried out. The Agency will begin implementing recommendations from the marine pollution studies, including public education and citizen monitoring.

The research program will develop and validate assessment methodologies to support comprehensive protection and management planning for estuaries and near coastal waters. Assessment methods are required to characterize point and nonpoint sources of pollution, determine the exposure of and effect on living resources to pollutants, and provide quantitative risk assessment for managing estuarine and near coastal waters. Emphasis will be given to the development/testing of biomarker assessment methods, development of wasteload allocation models for estuaries, studies of system resiliency, recovery, and eutrophication.

Nonpoint Source Pollution Control

Recognizing that NPS pollution is a major contributor to both toxic and nontoxic water quality problems, EPA will assist states to successfully develop and implement Section 319 programs that will anchor the long-term future of NPS management efforts across the United States. We will proceed in 1989 with full state management program approvals only where the state has clearly met the requirements of the Act; elsewhere EPA will use partial program approvals combined with EPA assistance to help upgrade state programs prior to approval. In 1990, EPA will provide financial and technical assistance to states to make certain that state NPS programs succeed in both the short- and long-term.

Specifically, EPA will provide information and tools states need in a national outreach program aimed at generating public understanding of and commitment to deal effectively with NPS pollution. This outreach program will help build support for state/local funding initiatives and innovative use of

State Revolving Fund resources. EPA will help states develop innovative statewide program approaches to NPS prevention and control, including regulatory programs, funding mechanisms and financial incentives. This will be achieved through a comprehensive program that transfers technical information and successful approaches for implementing targeted watershed projects and a clearinghouse for state/local funding ideas.

To further strengthen NPS management, EPA will network existing statutory and regulatory authorities as well as continue to develop water quality standards, criteria and monitoring approaches for NPS pollution. EPA will encourage states to leverage other program resources for NPS control, especially those of the USDA, and emphasize public/private partnerships to promote use of land conservancy as a Best Management Practice. EPA will integrate its authorities and programs to deal with pesticide and fertilizer contamination associated with agricultural practices and to coordinate use of stormwater permitting requirements under Section 402(p) with state programs.

Control Discharges of Toxic and Hazardous Pollutants

By February 1989, states will develop and submit to EPA lists of waters, sources, and amounts of toxic pollutants, and individual control strategies (ICS) for reducing the discharge of toxic pollutants and hazardous substances into impaired waters. The ICS will consist of National Pollutant Discharge Elimination System (NPDES) permits based on total maximum daily loadings and wasteload allocations, as needed, and accompanying fact sheets. EPA must then review and approve or disapprove the states' lists and ICS within 120 days. One year thereafter, EPA must issue ICS where the states failed to do so or where such ICS are not approved by EPA.

EPA and states will issue or modify major permits where assessments are completed and toxic/toxicity controls determined, issue major permits with toxic/toxicity limits or biomonitoring requirements where assessments have not been completed but toxics problems have been identified, and issue Best Available Technology (BAT) permits to organic chemical facilities. As toxic and hazardous pollutants and control needs are identified, pretreatment programs will become increasingly important, and municipalities will need to incorporate appropriate local limits into their pretreatment program requirements. EPA will continue to audit municipal pretreatment programs to assess the need for new or revised local limits and determine if publicly owned treatment works (POTWs) are properly applying categorical standards. EPA/state enforcement actions will be taken where POTWs do not adequately implement their approved pretreatment program. Additionally, direct enforcement against non-complying industrial users will provide an immediately effective means of controlling toxic pollutant and toxicity discharges to POTWs. To accompany the increasing emphasis on toxic controls in permits, EPA continues to work with states to develop, revise, and approve state sludge management programs. Sludge disposal/use controls will continue to be incorporated into high priority POTW permits, as will sludge monitoring requirements into other expiring POTW permits.

EPA will also implement a Toxics Control Strategy for NPDES enforcement that addresses compliance monitoring for toxics and toxicity, identifies how to track the results of permittee toxicity reduction evaluations, and recommends appropriate enforcement responses. This Strategy will significantly change the NPDES inspection program and require inspections to include assessing permittee biomonitoring and toxics sampling capabilities and performance.

In support of improved toxic assessments and controls, EPA will improve its surface water monitoring data base and technical procedures for performing exposure and risk assessments and identifying hazards. The Agency will also perform exposure and risk assessments to identify toxic pollutants that are the most likely candidates for future 307(a) listing or other regulatory requirements (e.g., developing EPA criteria). EPA will develop controls and/or guidance for treating industrial discharges that are identified or suspected of being toxic; continue to review existing and new industries pursuant to 304(m); develop additional EPA criteria (including criteria for sediments); and develop and/or update guidance for identifying impaired waters, conducting risk assessments/wasteload allocations, controlling additional toxic and hazardous substances that contribute to use impairment, and conducting monitoring programs. In 1990, EPA will also work with states and Indian tribes as they develop water quality standards for toxic pollutants.

The research program will focus on the development of improved approaches for enhanced control of toxics and toxicity in municipal wastewater treatment and the determination of specific biological pathways and decomposition products. It will also continue to develop a data base on the kinetics of removal of specific toxics by sorption, volatilization, and biodegradation; correlate fate data with fundamental physical-chemical properties of the compounds; develop predictive methods or models for the fate of toxics in publicly-owned treatment works; develop toxicity reduction evaluation (TRE) procedures for municipal wastewater treatment plants to support the Agency's "Policy for Development of Water Quality-Based Permit Limitations"; and assess the treatability in municipal wastewater treatment plants of leachates and effluents from superfund sites and other solid and hazardous waste dischargers. The research data will facilitate evaluation and prediction of the consequences of toxics pass-through in various wastewaters into the freshwater and marine environment, thereby enabling rational decisions under Sections 403(c) and 301(h) of the CWA. The data directly support the pretreatment studies required in Section 519 of the Water Quality Act of 1987, and the Agency's regulatory decisions on RCRA compounds.

Continue Environmental Gains

EPA is managing dual programs to finance wastewater treatment facilities under the Clean Water Act -- the construction grants program and the new State Revolving Fund (SRF) program -- and by 1990, will be midway in implementing the Act's transition to state and local self sufficiency with SRFs. Capitalization grants will be provided to states for establishing and managing their SRF programs on a sound, self-sustaining basis. Also, with the assistance of the Corps of Engineers, EPA will be managing the large number of active grant projects to prompt and effective completion. EPA will continue to work closely with state and local governments to ensure effective transition of project level fiscal and management responsibilities. At the same time EPA will undertake important initiatives in outreach assistance to hard pressed small communities, coordinating wastewater and drinking water treatment program efforts for maximum local benefit.

EPA will also address national issues relating to current infrastructure protection, financial and administrative impacts of water quality requirements, and toxic and sludge management requirements in small communities and states. Oversight of delegated programs, operations and maintenance compliance efforts, and effective completion of construction grants responsibilities will continue.

In 1990 the National Municipal Policy (NMP) effort will be almost complete, with all but 85 major municipal facilities expected to have completed construction to meet final effluent limits. The 1990 effort for NMP will be to track compliance for these facilities and for a small number of facilities that will not meet their 1989 construction completion deadlines. The major emphasis of the municipal and industrial enforcement program in 1990 will be to enforce requirements in NPDES permits designed to control toxic discharges. This will involve a higher percentage of toxics-related inspections and an anticipated increase in significant noncompliance requiring more complex enforcement actions. The emphasis for the pretreatment program will continue to be on compliance by POTWs and Industrial Users (IUs), and expanding the IU compliance assessment/enforcement activities where EPA or the state is the control authority.

Recognizing the critical role of accurate water quality information for Federal and state surface water pollution control activities, EPA will continue to develop and improve the information base, technical tools and data systems needed for effective decision-making by EPA and the states. This will include implementation of a national data base containing lists of impacted waters; enhancement of the Permit Compliance System data base to enable data systems integration and graphics and mapping applications; development of specific program guidance for state monitoring and water quality analysis programs; development of technical guidance on biological monitoring, ecoregions and other monitoring techniques; and direct technical assistance and training for state staffs.

Consulting Services

The Agency uses contractual resources to fulfill the requirements of its operating legislation, specifically in providing technical assistance to Regions, state, and local governments; collecting data and monitoring background levels as a basis for future regulatory actions; and conducting studies and analysis which support new programs.

WATER QUALITY

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase + Decrease - 1990 vs. 1989

PROGRAM ACTIVITIES				
Incremental Outputs				
EPA Ocean Dumping Permits....	25	25	25	0
Ocean Discharge Criteria Evaluations.....	12	12	28	+16
Construction Grants Awards.....	634	282	63	-219
Active Construction Grants Projects.....	6,244	5,996	5,529	-467
Construction Project Completions.....	806	681	528	-153
Permits Issued by EPA:				
Municipal				
Major.....	160	175	219	+44
Sludge Requirements.....	0	175	219	+44
Minor.....	304	0	0	0
Non-Municipal				
Major.....	176	235	223	-12
Minor.....	533	0	0	0
General.....	3	5	5	0
Adjudicatory Hearings Settled.....	22	65	75	+10
Enforcement Actions:				
Inspections.....	2,484	1,900	1,900	0
Admin. Orders (AOs).....	1,145	463	635	+172
AOs with Penalties.....	135	387	246	-141
Civil Litigation.....	85	110	59	-51
Criminal Litigation.....	13	11	14	+3
Clean Lakes Projects Awarded.....	0	77	10	-67
Water Quality Criteria.....	10	5	5	0

WATER QUALITY

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase + Decrease - 1990 vs. 1989

PROGRAM ACTIVITIES				
Cumulative Outputs				
Operational SRF Programs....	8	40	51	+11
Final Effluent guidelines....	37	41	43	+2
Propose Regulations for Sludge Reuse/Disposal Options.....	5	5	5	0
NPDES State Program Approvals	39	39	40	+1
National Estuary Projects....	12	12	16	+4

Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>WATER QUALITY</u>	3-1
RESEARCH AND DEVELOPMENT	
Water Quality Research.	3-10
Scientific Assessment.	3-14
Monitoring Systems and Quality Assurance	3-15
Health Effects	3-17
Environmental Engineering and Technology	3-18
Environmental Processes and Effects.	3-19
Great Lakes.	3-20



WATER QUALITY
Water Quality Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Scientific Assessment - Water					
Salaries & Expenses	\$315.4	\$310.2	\$287.3	\$305.0	\$17.7
Research & Development	\$336.0	\$341.7	\$316.7	\$316.7	
TOTAL	\$651.4	\$651.9	\$604.0	\$621.7	\$17.7
Monitoring Systems And Quality Assurance - Water					
Salaries & Expenses	\$2,501.6	\$3,068.3	\$3,013.3	\$3,383.7	\$370.4
Research & Development	\$906.7	\$1,006.4	\$1,006.4	\$1,006.4	
TOTAL	\$3,408.3	\$4,074.7	\$4,019.7	\$4,390.1	\$370.4
Health Effects - Water					
Salaries & Expenses	\$1,212.1	\$661.5	\$593.7	\$614.2	\$20.5
Research & Development	\$82.8				
TOTAL	\$1,294.9	\$661.5	\$593.7	\$614.2	\$20.5
Environmental Engineering And Technology - Water					
Salaries & Expenses	\$2,315.2	\$2,143.0	\$2,124.8	\$2,558.6	\$433.8
Research & Development	\$3,268.4	\$3,357.5	\$3,352.6	\$3,482.5	\$129.9
TOTAL	\$5,583.6	\$5,500.5	\$5,477.4	\$6,041.1	\$563.7
Environmental Processes And Effects - Water					
Salaries & Expenses	\$8,998.9	\$8,820.9	\$8,870.0	\$9,132.0	\$262.0
Research & Development	\$2,519.6	\$2,674.8	\$2,674.8	\$3,529.8	\$855.0
TOTAL	\$11,518.5	\$11,495.7	\$11,544.8	\$12,661.8	\$1,117.0
Great Lakes Research - Water					
Salaries & Expenses	\$444.8	\$461.5	\$461.5	\$480.0	\$18.5
Research & Development	\$1,456.7	\$1,497.6	\$1,497.6	\$1,497.6	
TOTAL	\$1,901.5	\$1,959.1	\$1,959.1	\$1,977.6	\$18.5
TOTAL:					
Salaries & Expenses	\$15,788.0	\$15,465.4	\$15,350.6	\$16,473.5	\$1,122.9
Research & Development	\$8,570.2	\$8,878.0	\$8,848.1	\$9,833.0	\$984.9
Water Quality Research TOTAL	\$24,358.2	\$24,343.4	\$24,198.7	\$26,306.5	\$2,107.8

WATER QUALITY
Water Quality Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PERMANENT WORKYEARS					

Scientific Assessment - Water	4.0	5.5	5.1	5.0	-.1
Monitoring Systems And Quality Assurance - Water	43.6	55.5	54.5	54.4	-.1
Health Effects - Water	22.9	9.5	9.1	9.1	
Environmental Engineering And Technology - Water	35.1	37.5	37.4	37.3	-.1
Environmental Processes And Effects - Water	145.2	152.8	152.4	152.2	-.2
Great Lakes Research - Water	4.6	8.0	8.0	8.0	
TOTAL PERMANENT WORKYEARS	255.4	268.8	266.5	266.0	-.5
TOTAL WORKYEARS					

Scientific Assessment - Water	5.5	5.5	5.1	5.0	-.1
Monitoring Systems And Quality Assurance - Water	47.0	55.5	54.5	54.4	-.1
Health Effects - Water	25.8	9.5	9.1	9.1	
Environmental Engineering And Technology - Water	35.9	37.5	37.4	37.3	-.1
Environmental Processes And Effects - Water	161.1	152.8	152.4	152.2	-.2
Great Lakes Research - Water	7.2	8.0	8.0	8.0	
TOTAL WORKYEARS	282.5	268.8	266.5	266.0	-.5

WATER QUALITY

Water Quality Research

Principal Outputs by Objective

Objective 1: Develop Scientific Data to Support a Water Quality Based Approach to Pollution Control

- 1990: o Report on validation of water quality criteria for Selenium (Environmental Processes)
- o Report on water quality functions of wetlands (Environmental Processes)
- o Report on the chronic toxicology of phthalic acids (Health)
- o Prepare 10 new health advisories (Scientific Assessment)
- o Evaluate monitoring techniques and a generic approach to measurements of toxic compounds (Monitoring)

- 1989: o Finalize 55 water quality addenda for water criteria documents (Scientific Assessment)
- o Evaluate and standardize methodology for quantification of human pathogens (Monitoring)
- o Report on developing sediment quality criteria from existing water quality criteria (Environmental Processes)

- 1988: o Provide addenda to 65 ambient water quality documents (Scientific Assessment)
- o Provide bioassay approach for evaluating the health hazards of waste water effluents (Health)
- o Report on the toxicity identification of the toxic components of effluents (Environmental Processes)

Objective 2: Develop Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs

- 1990: o Assessment of the second generation techniques for permitting ocean outfalls (Environmental Processes)
- o Verification of models used in 301(h) to define the zone of initial dilution and water quality parameters (Environmental Processes)

- 1989: o Development of validation of solid phase bioaccumulation tests (Environmental Processes)
- o Report on the ecological effects of nutrients vs. contaminants from Publically-Owned Treatment Works (POTWs) (Environmental Processes)
- o Report on methods for predicting biological impacts of in-place pollutants in the upper Great Lakes connecting channels (Environmental Processes)

- 1988:
- o Risk assessment of the ocean disposal of dredged material (Environmental Processes)
 - o Report on assessment and application of pollutants biomagnification evaluation techniques (Environmental Processes)
 - o Report describing mass balances of toxicants of concern in the upper Great Lakes connecting channels (Environmental Processes)

Objective 3: Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology

- 1990:
- o Finalize surface impoundment methodology (Scientific Assessment)
 - o Report on the fate of toxic organics during sludge treatment (Engineering)
 - o Report on pilot-scale treatability studies on the pesticides manufacturing wastewater (Engineering)
 - o Maintain discharge monitoring report as support for the quality assurance program (Monitoring)
- 1989:
- o Finalize pathogen land application methodology (Scientific Assessment)
 - o Standardize methodology for collection, identification, and enumeration of human pathogenic organisms in sludge and soil to monitor the safety of direct land-application of wastewater and/or sludge (Monitoring)
 - o Report on evaluation of effectiveness of available methodology for reducing toxic metals and organics from incineration emissions (Engineering)
- 1988:
- o Finalize chemical methodologies responding to the Science Advisory Board's (SAB's) concerns (Scientific Assessment)
 - o Provide real-time process monitoring methodology for toxic conditions (Monitoring)
 - o Report on the occurrence of synthetic chemical constituents in distribution and marketing sludge products (Health)

WATER QUALITY

Water Quality Research

Budget Request

The Agency requests a total of \$26,306,500 supported by 266.0 total workyears for 1990, an increase of \$2,107,800 and a decrease of 0.5 in total workyears from 1989. Of the request, \$16,473,500 will be for the Salaries and Expenses appropriation and \$9,833,000 will be for the Research and Development appropriation, an increase of \$1,122,900 and of \$984,900, respectively.

Program Objectives

The Water Quality research program provides the scientific and technical data to states and the EPA's Office of Water in implementing the Clean Water Act and the Marine Protection, Research and Sanctuaries Act.

Objective 1: Develop Scientific Data to Support a Water Quality Based Approach to Pollution Control. This research provides the scientific base to help states develop water quality standards, to conduct use-attainability analyses and to provide needed information to implement a water quality based pollution control program.

Objective 2: Develop Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs. This activity provides the research needed by EPA for evaluating impacts of ocean disposal practices, understanding the Great Lakes ecosystems and developing responsive and scientifically valid estuarine and coastal waters programs.

Objective 3: Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. The wastewater research program provides the technical information, engineering, and monitoring necessary to develop and implement regulations and guidance for sludge disposal, control municipal treatment plants to bring them into compliance with state discharge permits, and to support the National Pollution Discharge Elimination System (NPDES).

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$621,700 supported by 5.0 total workyears for this program, of which \$305,000 will be for the Salaries and Expenses appropriation and \$316,700 will be for the Research and Development appropriation. This represents an increase of \$17,700 in the Salaries and Expenses appropriation, no change in the Research and Development appropriation, and an reduction of 0.1 in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The

workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Develop Scientific Data to Support a Water Quality Based Approach to Pollution Control. This activity, in support of Post-BAT requirements, will continue to support the Agency and the states in modifying, and implementing health criteria for ambient water quality. This activity also develops health advisories in support of effluent regulations for toxics and provides technical support to the regions and states on risk assessments and the theories behind them.

Evaluation of Innovative and Alternative (I/A) Technologies. Sludge Management Alternatives and Toxicity Reduction Methods and Technology. The CWA Amendments require the Agency to identify and regulate toxic pollutants in sludge. This program will provide technical support in developing and implementing these regulations including the development of criteria for the assessment of hazard and risk from exposure to pathogens in sludge, and surface impoundments methodology for disposed of municipal sludge.

1989 Program

In 1989, the Agency is allocating a total of \$604,000 supported by 5.1 total workyears for this program, of which \$287,300 is from the Salaries and Expenses appropriation and \$316,700 is from the Research and Development appropriation. The research efforts as in 1990 supports the Agency and states on health criteria for water quality, develops health advisories in support of effluent regulations, provides technical support for risk assessments to the regions and states, develops criteria for assessment of hazard and risk from pathogens in sludge, and develop methodology for disposal of municipal sludge in surface impoundments.

1988 Accomplishments

In 1988, the Agency obligated a total of \$651,400 supported by 5.5 total workyears for this program, of which \$315,400 was from the Salaries and Expenses appropriation and \$336,000 was from the Research and Development appropriation. The program revised 65 ambient water quality documents. Provided technical support to the regions and states on criteria documents. Initiated pathogen and application methodology for use in risk assessment and finalized chemical methodology responding to the Science Advisory Boards (SAB's) comments.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$4,390,100 supported by 54.4 total workyears for this program, of which \$3,383,700 will be for the Salaries and Expenses appropriation and \$1,006,400 will be for the Research and Development appropriation. This represents an increase of \$370,400 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and an reduction of 0.1 total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The

workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Develop Scientific Data to Support a Water Quality Based Approach to Pollution Control. The CWA Amendments place emphasis on the development of methods to measure and monitor water quality. In support of this activity, the program will develop and standardize methods and provide field tested protocols to assess ambient water quality. In addition, the program will evaluate biological monitoring techniques and a generic approach for the chemical measurement of toxic organics and inorganics in ambient sources.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. The Discharge Monitoring Report-Quality Assurance (DMRQA) Support Program will be maintained to provide quality, self-monitoring DMRQA data submitted to the States and EPA by the 7,000 major dischargers within the National Pollution Discharge Elimination System (NPDES).

1989 Program

In 1989, the Agency is allocating a total of \$4,019,700 supported by 54.5 total workyears for this program, of which \$3,013,300 is from the Salaries and Expenses appropriation and \$1,006,400 is from the Research and Development appropriation.

This research program is evaluating chemical monitoring methods and protocols designed to measure site-specific aspects of water quality. The program provides cost-effective monitoring methods for the measurement of chemical and biological parameters required in the National Pollution Discharge Elimination System (NPDES) program and in the assessment of water quality and contaminants in sediments and sludges.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,408,300 supported by 47.0 total workyears for its monitoring and quality assurance program in water quality, of which \$2,501,600 was from the Salaries and Expenses appropriation and \$906,700 was from the Research and Development appropriation.

In support of the Clean Water Act, the Marine Protection Research and Sanctuaries Act, and the National Pollution Discharge Elimination System (NPDES), standardized analytical methods were developed for the quantification of physical phenomena and chemical characteristics of water, wastewater, biological tissues, sediments, and sludges. Interlaboratory comparisons were performed to assess the performance of chemical and biological methods for the analysis of contaminants regulated under NPDES. A repository of toxic standards and calibration samples was maintained.

HEALTH EFFECTS

1990 Program Request

The Agency requests a total of \$614,200 supported by 9.1 total workyears for this program, of which \$614,200 will be for the Salaries and Expenses appropriation and no dollars for the Research and Development appropriation. This represents an increase of \$20,500 in the Salaries and Expenses appropriation, with no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs.

Evaluation of Innovative and Alternative (I/A) Technologies. Sludge Management Alternatives and Toxicity Reduction Methods and Technology. Health effects associated with exposure to chemicals found in sludge or sludge products will be evaluated. The data generated from this research support the development and defense of sludge disposal criteria. Methods will also be developed to determine the delivered dose to target sites from exposure to chemicals found in sludge.

1989 Program

In 1989, the Agency is allocating a total of \$593,700 supported by 9.1 total workyears for this program, of which \$593,700 is from the Salaries and Expenses appropriation and no dollars for the Research and Development appropriation.

The research program is providing data on the health aspects of chemicals found in sludges used for land application, distribution and marketing and other use and disposal options. To support risk evaluation of various sludge disposal options, this in-house program is conducting research in dose-response toxicology on major chemicals found in sludge products and on biological indicators of dose to determine human exposure to chemicals found in sludge.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,294,900 supported by 25.8 total workyears for this program, of which \$1,212,100 was from the Salaries and Expenses appropriation and \$82,800 was from the Research and Development appropriation.

Research activities were directed toward developing health effect bioassays to support the evaluation of wastewater effluents and sludges, and the occurrence of pathogens in sludge. A number of reports relating to this research were produced. Several were: a health effects bioassay methods manual for determining whether receiving streams meet water quality standards; a report on the occurrence of synthetic chemical constituents in sludges and sludge products in distribution and marketing channels; a report on survival of ascaris eggs, a major pathogen contaminant in wastewater sludges, when sludges are deposited on soils; and a report on the infectious dose of viruses in environmental samples.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$6,041,100 supported by 37.3 total workyears for this program, of which \$2,558,600 will be for the Salaries and Expenses appropriation and \$3,482,500 will be for the Research and Development appropriation. This represents an increase of \$433,800 in the Salaries and Expenses appropriation, with an increase of \$129,900 in the Research and Development appropriation, and an reduction of 0.1 in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives and Toxicity Reduction Methods and Technology. Innovative and alternative technologies will be evaluated to determine and promote more cost-effective treatment processes. Technical support will be provided to the Office of Water on sludge regulation development and implementation. To support the development of permit limitations for municipal and industrial wastewaters, toxicity treatability will be assessed. Toxicity reduction evaluation procedures and removal capabilities will also be developed for the various treatment processes. Technical support will be provided to municipalities to upgrade existing plant capabilities to achieve compliance with minimal costs. Research and technical assistance related to constructed wetlands will be initiated to evaluate the cost effectiveness and efficiency of this treatment as an option.

1989 Program

In 1989, the Agency is allocating a total of \$5,477,400 supported by 37.4 total workyears for this program, of which \$2,124,800 is from the Salaries and Expenses appropriation and \$3,352,600 is from the Research and Development appropriation.

Technology evaluations are being conducted on selected potential I/A candidates. Technical support and engineering assistance are being provided to EPA and municipalities for the development and implementation of sludge technical regulation, especially in the area of sludge incineration. Support and assistance are being provided to the state for the development of sludge and permitting requirements rules. Treatment mechanisms in activated sludge and other aerobic treatment processes in terms of toxics removal and control are being investigated.

1988 Accomplishments

In 1988, the Agency obligated a total of \$5,583,600 supported by 35.9 total workyears for this program, of which \$2,315,200 was from the Salaries and Expenses appropriation and \$3,268,400 was from the Research and Development appropriation.

Several of the engineering accomplishments were: evaluation on partitioning of harmful materials in sludge between sludge and seawater, development of municipal Toxicity Reduction Evaluation (TRE) protocol with case history, standard bench-scale testing protocol for assessing the treatability of toxics in wastewater, and TRE case history for the Chesapeake Bay program.

ENVIRONMENTAL PROCESSES AND EFFECTS

1990 Program Request

The Agency requests a total of \$12,661,800 supported by 152.2 total workyears for this program, of which \$9,132,000 will be for the Salaries and Expenses appropriation and \$3,529,800 will be for the Research and Development appropriation. This represents an increase of \$262,000, in the Salaries and Expenses appropriation, and an increase of \$855,000 in the Research and Development appropriation. Total workyears will decrease by 0.2 FTE. The increase in Salaries and Expenses reflects increased personnel and support costs. The increase in the Research and Development appropriation reflects additional research on sediment quality issues, new research on constructed wetlands, and new research equipment to support the estuarine and coastal waters research programs. The workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Develop Scientific Data to Support a Water Quality Based Approach to Pollution Control. In response to the new Post-BAT requirements of the CWA Amendments, the research program will develop methods to determine what uses are attainable in aquatic systems, and to work on integrating pollutant-specific control methods with whole toxicity testing procedures and best available technology limits for use in permitting. Research will also strengthen the scientific and technical data base and methodologies to assess water quality functions of wetlands, to assess individual and cumulative impacts of wetland conversions, and evaluate means of mitigating actions on wetlands. Increased emphasis will be given to research on sediment quality issues. The data from these studies will assist the States in developing individual strategies for controlling toxic pollutants found in sediments.

Develop Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs. This activity will develop risk assessment procedures to permit the evaluation of impacts due to the ocean disposal of wastes in coastal waters. The integration of these procedures will allow the determination of the relative safety of ocean disposal and provide for the comparison of alternative disposal strategies. Research will also be conducted to support the Agency's strategy to reduce pollution in near coastal waters. The research program will focus on recovery of coastal ecosystems, development of biomarker assessment methods, and development of wasteload allocation models for estuarine and coastal waters.

Evaluation of Innovative and Alternative (I/A) Technologies, Sludge Management Alternatives, and Toxicity Reduction Methods and Technology. Research will continue to maintain and update the existing gas chromatograph/mass spectroscopy tape library and develop new analytical data bases of toxic pollutants found in industrial wastewater. The data bases will provide the information on wastewater treatment technology needed to support the NPDES program. Research on ecological fate and effects issues associated with wetlands constructed for wastewater treatment will be initiated to evaluate the effects of this option.

1989 Program

In 1989, the Agency is allocating a total of \$11,544,800 supported by 152.4 total workyears for this program, of which \$8,870,000 is from the Salaries and Expenses appropriation and \$2,674,800 is from the Research and Development appropriation.

Research is being conducted to develop methods to integrate whole effluent testing procedures with chemical specific control technology. The methods to assess water quality functions of wetlands, the cumulative loss of wetlands as well as the mitigation of impacts on wetlands are being developed. Research on methods to better assess the impacts of ocean disposal activities is being conducted. These procedures will be used in risk assessments. Estuarine and near coastal waters research is focused on questions of ecosystem recovery, eutrophication, wasteload allocation and biomarkers as assessment techniques in coastal waters.

1988 Accomplishments

In 1988, the Agency obligated a total of \$11,518,500 supported by 161.1 total workyears for this program, of which \$8,998,900 was from the Salaries and Expenses appropriation and \$2,519,600 was from the Research and Development appropriation.

Major accomplishments included the development of aquatic life water quality criteria documents and water quality advisories. A report on the identification of the toxic components of effluents using toxicity tests, completion of a risk assessment of the ocean disposal of dredged materials, and a report on assessment and application of biomagnification evaluation techniques.

GREAT LAKES

1990 Program Request

The Agency requests a total of \$1,977,600 supported by 8.0 total workyears for this program, of which \$480,000 will be for the Salaries and Expenses appropriation and \$1,497,600 will be for the Research and Development appropriation. This represents an increase of \$18,500 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation or total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs.

Develop Scientific Data Needed to Support Environmentally Sound Ocean Disposal, Estuarine and Great Lakes Programs. Research will develop and test methods to determine the sources, movement and effects of toxic substances in the Great Lakes. Emphasis will be given to research on in-place pollutants and mass balance studies. This program will also provide the Great Lakes National Program Office, Regions II, III and V, the Great Lakes states, and the International Joint Commission (under the US/Canada Water Quality Agreement) with technical support and research data.

1989 Program

In 1989, the Agency is allocating a total of \$1,959,100 supported by 8.0 total workyears for this program, of which \$461,500 is from the Salaries and Expenses appropriation and \$1,497,600 is from the Research and Development appropriation. The program is focusing on the impact and fate of toxic materials in areas of concern identified by the Great Lakes Water Quality Board. Emphasis is on in-place pollutants, chemical mass balance research, and evaluation of the effectiveness of confined disposal facilities for dredged material.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,901,500 supported by 7.2 total workyears for this program, of which \$444,800 was from the Salaries and Expenses appropriation and \$1,456,700 was from the Research and Development appropriation.

Among the accomplishments of the Great Lakes Research program were: a report describing the mass balance of toxicants of concern in the upper Great Lakes connecting channels; and technical assistance provided to the Great Lakes National Program Office, the Regions, and the International Joint Commission.

Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>WATER QUALITY</u>	3-1
ABATEMENT AND CONTROL	
Water Quality and Grants Program Management	3-22
Water Quality Management	3-24
Great Lakes Program.	3-26
Chesapeake Bay Program	3-28
Effluent Standards and Guidelines	3-31
Grants Assistance Programs.	3-34
Clean Lakes Program.	3-35
Control Agency Resource Supplementation (Section 106).	3-36
Water Quality Strategies Implementation	3-40
Wetlands Protection.	3-42
Ocean Disposal Permits	3-45
Environmental Emergency Response and Prevention.	3-47
Standards and Regulations.	3-48
Water Quality Monitoring and Analysis	3-51
Coastal Environment Management	3-53
Water Quality Monitoring and Analysis.	3-55
Municipal Source Control.	3-58
Municipal Waste Treatment Facility Construction.	3-60
Waste Treatment Operations and Maintenance	3-62



WATER QUALITY
Water Quality And Grants Program Management

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Water Quality
Management

Salaries & Expenses	\$4,191.8	\$4,932.0	\$4,915.9	\$5,298.4	\$382.5
Abatement Control and Compliance	\$777.4	\$1,171.0	\$1,187.0	\$1,187.0	
TOTAL	\$4,969.2	\$6,103.0	\$6,102.9	\$6,485.4	\$382.5

Great Lakes Program

Salaries & Expenses	\$1,410.5	\$2,382.9	\$2,382.9	\$2,407.2	\$24.3
Abatement Control and Compliance	\$9,472.4	\$11,097.3	\$11,023.7	\$9,023.7	-\$2,000.0
TOTAL	\$10,882.9	\$13,480.2	\$13,406.6	\$11,430.9	-\$1,975.7

Chesapeake Bay Program

Salaries & Expenses	\$1,451.3	\$1,216.2	\$1,216.2	\$1,264.8	\$48.6
Abatement Control and Compliance	\$10,244.1	\$11,000.0	\$10,948.8	\$10,698.8	-\$250.0
TOTAL	\$11,695.4	\$12,216.2	\$12,165.0	\$11,963.6	-\$201.4

TOTAL:

Salaries & Expenses	\$7,053.6	\$8,531.1	\$8,515.0	\$8,970.4	\$455.4
Abatement Control and Compliance	\$20,493.9	\$23,268.3	\$23,159.5	\$20,909.5	-\$2,250.0

Water Quality And
Grants Program
Management

TOTAL	\$27,547.5	\$31,799.4	\$31,674.5	\$29,879.9	-\$1,794.6
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WATER QUALITY
Water Quality And Grants Program Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PERMANENT WORKYEARS -----					
Water Quality Management	82.8	99.5	99.1	105.7	6.6
Great Lakes Program	21.2	33.0	32.4	35.4	3.0
Chesapeake Bay Program	15.5	9.5	9.5	10.0	5
TOTAL PERMANENT WORKYEARS	119.5	142.0	141.0	151.1	10.1
TOTAL WORKYEARS -----					
Water Quality Management	88.1	103.2	102.7	105.7	3.0
Great Lakes Program	24.8	36.0	35.4	35.4	
Chesapeake Bay Program	17.0	10.0	10.0	10.0	
TOTAL WORKYEARS	129.9	149.2	148.1	151.1	3.0

WATER

WATER QUALITY

Water Quality and Grants Program Management

Budget Request

The Agency requests a total of \$29,879,900 supported by 151.1 total workyears for 1990, a decrease of \$1,794,600 and an increase of 3.0 total workyears from 1989. Of the request, \$8,970,400 will be for the Salaries and Expenses appropriation and \$20,909,500 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$455,400 in the Salaries and Expenses appropriation and a decrease of \$2,250,000 in the Abatement, Control and Compliance appropriation.

WATER QUALITY MANAGEMENT

1990 Program Request

The Agency requests a total of \$6,485,400 supported by 105.7 total workyears for this program, of which \$5,298,400 will be for the Salaries and Expenses appropriation and \$1,187,000 will be for the Abatement, Control and Compliance appropriation.. This represents an increase of \$382,500 for the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation, and an increase of 3.0 total workyears. The increase will be used to initiate a National outreach program to educate the public and local governments on nonpoint source (NPS) controls and to enhance the dissemination of innovative/successful approaches to implementing targeted NPS management programs.

In 1990, EPA will have approved most states' Section 319 NPS assessment reports and management programs and the states will be working with EPA to implement and refine these programs. EPA will initiate a National outreach program to educate the public/local governments on NPS control and will continue to implement a comprehensive program encouraging targeted implementation to protect critical aquatic habitats. Supported by Headquarters policies, guidance and technical support, Regions will work with states to address categories of nonpoint sources inadequately addressed by management programs. A final report to Congress will be prepared summarizing the states' progress in implementing Section 319, including recommendations for needed programmatic changes. Regions will continue negotiating and managing work programs for Section 205(j)(5) grants to 57 states and territories to complete development and/or initiate implementation of NPS management programs. Headquarters will conduct limited program audits to assure national consistency in the award and management of Section 205(j)(5) grants.

Headquarters will continue to allocate Section 106 funds to Regions, states, and Indian tribes; provide guidance on basic program issues; conduct mid-year evaluations of Regional programs; and evaluate the performance of selected Indian tribes and regional organizations. Regions will continue to negotiate and provide Sections 106 and 205(j)(1) grant funds to 203 state/interstate/regional organizations and Indian tribe water quality agencies,

ensuring that these funds are utilized effectively and targeted to critical water quality needs. To accomplish this, Regions will issue guidance and funding targets for specific priority activities, provide technical and management assistance, track and evaluate grantee performance, and assure that state level-of-effort (LOE) requirements are met.

1989 Program

In 1989, the Agency is allocating a total of \$6,102,900 supported by 102.7 total workyears for this program, of which \$4,915,900 is from the Salaries and Expenses appropriation and \$1,187,000 is from the Abatement, Control and Compliance appropriation.

The review, revision, and approval of state NPS assessment reports and management programs continues, leading to approval of approximately 52 state management programs. An annual report to Congress is being prepared summarizing the states' progress in implementing Section 319. Approximately 10 workshops and 10 consultations are being provided to states on proven technologies for the design and implementation of watershed-level control systems. Regions are negotiating and managing work programs for 205(j)(5) grants to 57 states and territories to complete development and begin implementing NPS management programs, and program audits are being conducted by Headquarters to assure national consistency.

Headquarters is allocating Section 106 funds to Regions, states and Indian tribes, providing guidance on basic program issues, conducting mid-year evaluations of Regional programs and evaluating the performance of selected Indian tribes. Regions continue to negotiate and provide Sections 106 and 205(j)(1) grant funds to 203 state, interstate, regional organizations and Indian tribe water quality agencies.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,969,200 supported by 88.1 total workyears for this program, of which \$4,191,800 was from the Salaries and Expenses appropriation and \$777,400 was from the Abatement, Control and Compliance appropriation.

Headquarters directed the development and approval of state NPS assessment reports and management programs and provided technical support to the Regions and states. Policies and guidance were issued, including technical guidance describing current best management practices and encouraging the use of technological and managerial innovations developed through the Chesapeake Bay, Great Lakes, and the Department of Agriculture's Rural Clean Water Programs. Regions provided review and approval of state submissions and assisted selected states to correct deficiencies; negotiated and awarded 205(j)(5) grants; and provided support to ensure Federal, state and intra-agency consistency on NPS management. Headquarters and Regions also encouraged and assisted states to target their resources and those available from other Federal agencies to high priority water quality needs.

In 1988, Headquarters conducted basic grants management functions for Section 106 and 205(j) grants. The Water Quality Management grant regulations were revised and policy and guidance were issued to assist the Regions to provide grants to approximately 30 Indian tribes and 50 regional organizations. Headquarters completed a State Funding Study, identifying the funding needs for state management of water programs, and provided information on alternative

financing mechanisms to advance states' efforts toward development of innovative financing techniques to address state funding needs.

Regional staff worked to negotiate and manage performance-based Section 106, 205(j)(1), and non-construction 205(g) grants to state/interstate agencies. In 1988, Regions began to provide grants directly to eligible Indian tribes and ensured that the pass-through requirements applicable to local agencies for Section 205(j)(1) funding were met. Regions also ensured that state financial accounting systems met generally accepted accounting principles and that state expenditures matched approved work programs.

GREAT LAKES PROGRAM

1990 Program Request

The Agency requests a total of \$11,430,900 supported by 35.4 total workyears for this program, of which \$2,407,200 will be for the Salaries and Expenses appropriation and \$9,023,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$24,300 in the Salaries and Expenses appropriation, a decrease of \$2,000,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Abatement, Control and Compliance reflects a reduced level of expenditures following the completion of the purchase and refitting of the replacement research vessel and the nearing of completion of Remedial Action Plans (RAPs) for 30 U.S. Areas of Concern (AOCs) identified by the International Joint Commission (IJC).

Under the Clean Water Act (CWA), as amended, and the Great Lakes Water Quality Agreement (GLWQA), the Great Lakes National Program Office (GLNPO) will continue to provide technical and management leadership to address the emerging problems of persistent toxics in tributaries and near shore waters. This includes continuing support to state and local agencies to develop RAPs. By the end of 1990, 29 of the 30 plans are scheduled to be completed. The development of complementary Lakewide Management Plans will continue with initial plans developed for Lake Michigan and Lake Ontario.

The program office will continue with the Assessment and Remediation of Contaminated Sediments projects (formerly the In-Place Pollutant Demonstrations) at sites selected in 1989. These projects support RAP implementation by determining feasible technology for abatement of contaminated sediment problems, which have been identified in most of the AOCs. Outfitting of the Agency's replacement research vessel with laboratory modules for toxics monitoring needs will be completed. The configuration of the modules will be based in part on the findings of the Green Bay Mass Balance Modeling Study.

Technical support for and tracking of various state-level nonpoint source control programs designed to implement the U.S. phosphorus reduction plan will continue. The program office will continue to convene and participate in bilateral U.S./Canadian committees and task forces. The program will provide technical support to EPA Headquarters and to the Department of State on official Canadian requests concerning the United States' Great Lakes policies and programs. GLNPO will support Regions II, III, and V on water quality standards and on technical matters in the development and review of permits and permit compliance impacting the Great Lakes.

Great Lakes monitoring and source assessment activities will continue through annual programs for conventional and toxic pollutants; collection, analyses, and reporting on both open lake migratory and near shore non-migratory fish; and for collection of precipitation samples for the analyses of metals, nutrients, and organic toxics through the Great Lakes Atmospheric Deposition (GLAD) network. Surveillance activities will include continued biological sampling and the addition of air monitoring stations in the GLAD network. These analyses will be used to determine metals and nutrient loadings to the Great Lakes as a basis for the design and operation of regional pollution abatement programs. The Green Bay Mass Balance Study is developing predictive models for identification, transport, and fate of toxic substances.

1989 Program

In 1989, the Agency is allocating a total of \$13,406,600 supported by 35.4 total workyears for this program, of which \$2,382,900 is from the Salaries and Expenses appropriation and \$11,023,700 is from the Abatement, Control and Compliance appropriation.

GLNPO is completing the preliminary field work and biological and chemical studies required to select sites and begin the first projects in the Assessment and Remediation of Contaminated Sediments Program. In addition, pilot scale demonstrations of promising remedial technologies are being conducted. Specifications are being developed and a contract is being bid and let for the overhaul and outfitting of the replacement vessel to support Great Lakes research activities. GLNPO is continuing to provide direction and technical assistance to states in the development, review, and implementation of RAPs for 26 of the 30 U.S. AOCs.

The program office is beginning to carry out the recommendations of the 1988 Nonpoint Source Reduction Plan Implementation Report called for under Annex 3 of the GLWQA. GLNPO is tracking nonpoint source pollution control practices and providing technical assistance and monitoring for the Great Lakes States' phosphorus reduction efforts, including elements of the 1986 United States Plan for Phosphorus Load Reduction to Lake Erie, Lake Ontario and Saginaw Bay. Tributary monitoring for toxic pollutants is underway.

The expansion of the GLAD network has increased its analytical and research capabilities. GLNPO is also completing data acquisition for the Green Bay Mass Balance Study and beginning the analysis and interpretation of the data.

GLNPO is completing the negotiation of agreements with appropriate agencies, as specified in the CWA. Specific cooperative studies are being conducted with the National Oceanic and Atmospheric Administration to develop a research inventory. GLNPO will publish the results of the bi-national multi-agency Upper Great Lakes Connecting Channel study for use in developing the international RAPs for the St. Marys, St. Clair, and Detroit Rivers.

1988 Accomplishments

In 1988, the Agency obligated a total of \$10,882,900 supported by 24.8 total workyears for this program, of which \$1,410,500 was from the Salaries and Expenses appropriation and \$9,472,400 was from the Abatement, Control and Compliance appropriation.

The program office continued preliminary work to meet CWA requirements for selecting and initiating the Assessment and Remediation of Contaminated Sediments projects. The office also continued to conduct monitoring activities and laboratory analysis with emphasis on in-place toxics and establishment of the enhanced GLAD network to identify and quantify airborne toxics. Additional activities included continuation of both the Green Bay Mass Balance Study and a major effort to assist state and local agencies in review and completion of RAPs for 11 of 30 U.S. Areas of Concern. GLNPO also worked with all concerned parties to begin implementing the 1987 revisions to the GLWQA.

GLNPO continued its sampling network and laboratory activities. The various water chemistry, biota, sediment, and air analyses called for under GLWQA were carried out. The program office functioned as the catalyst to develop uniform multi-state fish consumption advisories.

CHESAPEAKE BAY PROGRAM

1990 Program Request

The Agency requests a total of \$11,963,600 supported by 10.0 total workyears for this program, of which \$1,264,800 will be for the Salaries and Expenses appropriation and \$10,698,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$48,600 in Salaries and Expenses, a decrease of \$250,000 in Abatement, Control and Compliance, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Abatement, Control and Compliance reflects a reduced level of expenditures following development of the Basinwide Toxics Reduction Strategy and completion of related start-up activities.

The Agency will continue to meet its expanded responsibilities under the Chesapeake Bay Agreement (CBA) of 1987 among the three Bay States of Pennsylvania, Maryland, and Virginia, the District of Columbia, and EPA. A redirection of program activities will continue in order to meet the CBA signatories' commitment to reducing the level of nutrients in the Bay by 40 percent by the year 2000 as well as to meet the Clean Water Act requirements to assess and control toxics through the program's ongoing monitoring activities. Under the expanded CWA responsibilities and CBA commitments, the Chesapeake Bay Liaison Office (CBLO) will continue to provide technical and management leadership in nutrient control and begin to address the emerging problems of persistent toxics in the Bay basin. The CBLO will continue its efforts to control nonpoint toxic sources by providing matching grants to the Bay states to implement such controls and improve the rate of progress to achieve the established levels of pollutant load reductions. Emphasis will continue on implementing the toxics strategy developed in 1989. The program will continue to give priority to nonpoint source pollution controls and the development of the time-varying Bay water quality model, as well as to the monitoring efforts needed to calibrate the model.

Building on the knowledge gained over the past several years concerning the effectiveness of best management practices (BMPs) to reduce erosion and sedimentation and manage animal waste, the states and EPA will continue to increase the number of acres treated, thus providing a greater reduction in the flow of nutrients to the Bay. By combining living resources, habitat requirements, and the geographic locations of prime habitat with monitoring data, and by modeling the effects of current and proposed point and nonpoint

source control actions, the CBLO will provide CBA participants with the information necessary to target their efforts and improve cost effectiveness. The information from the 1989 inspection of BMP installations will be used to further improve nonpoint source control targeting and to modify the nonpoint source control programs as necessary. Efforts to improve compliance of Bay dischargers under the National Pollutant Discharge Elimination System (NPDES) will continue through implementation of the Bay Compliance Initiative.

The Agency will continue to provide technical and administrative staff support to both the Chesapeake Bay Implementation Committee and Executive Council. Coordination functions will continue to be carried out with the states, other Federal agencies, and other Bay management agencies to ensure that continued progress is made in restoring Bay water quality. The Agency's support for monitoring the mainstem of the Bay will continue in concert with the states' focus on monitoring the major tributaries. Continued support will be provided for maintaining and improving the Chesapeake Bay data system, which is reported on annually.

1989 Program

In 1989, the Agency is allocating a total of \$12,165,000 supported by 10.0 total workyears for this program, of which \$1,216,200 is from the Salaries and Expenses appropriation and \$10,948,800 is from the Abatement, Control and Compliance appropriation.

The Agency is continuing to work with the Bay States to implement the elements of the 1987 CBA. This includes development of criteria for the protection of water quality and habitat conditions, a plan to reduce and control toxic materials entering the Bay from point and nonpoint sources, and a plan to achieve point and nonpoint source reduction from Federal installations that parallels the states' load reduction.

Matching grants to the Bay states for the implementation of nonpoint source controls are continuing to help states achieve the established levels of pollutant load reductions. Assistance is provided primarily to identify critical farm units within sub-basins, develop plans and schedules for implementing BMPs, define outreach programs to encourage farmer participation, and develop long-term comprehensive implementation programs. The primary objective is to demonstrate the effectiveness of BMPs in critical areas so that more farmers will adopt the practices. Water quality monitoring of pilot areas is being used in conjunction with water quality models to continue to evaluate the results of nonpoint source control implementation and develop quantitative relationships between pollution controls and improvement of water quality. As part of the time variant model development process, the steady state Bay model and its sister watershed model are being updated and calibrated. Work is expanding in the areas of toxics control and coordination of pollution controls to improve the management of living resources in the Bay. This work includes initial investigations into nonpoint sources of toxics, such as sediments and the surface microlayer.

Efforts toward improving compliance under the NPDES are beginning with the Bay Compliance Initiative, which increases the collection and evaluation of discharge monitoring reports and other compliance information on a timely basis.

The research and programmatic activities relating to the Bay and its basin of the National Oceanic and Atmospheric Administration, the U.S. Geological

Survey, the Corps of Engineers, the U.S. Department of Agriculture, and the Fish and Wildlife Service of the Department of the Interior continue to be coordinated through the CBLO.

1988 Accomplishments

In 1988, the Agency obligated a total of \$11,695,400 supported by 17.0 total workyears for this program, of which \$1,451,300 was from the Salaries and Expenses appropriation and \$10,244,100 was from the Abatement, Control and Compliance appropriation.

During 1988, the Agency continued to award grants to the Bay States to implement the recommendations of the Chesapeake Bay Restoration and Protection Plan of 1985. These 50 percent cost sharing grants continued to emphasize nonpoint source control efforts and were targeted on projects which support the long-term need for reducing loadings of toxics and nutrients. Grant assistance was also provided to implement controls on new urban and suburban development and on methods to retrofit nonpoint source controls in developed areas. About 150,000 acres have been treated with BMPs, and 1,170,000 tons of soil have been saved from erosion. Nearly 4,630,000 pounds of phosphorus have been prevented from entering the Bay.

The effort to produce a steady state model of water quality in the Bay has been completed and the three-year effort to produce a second generation, time-varying model of Bay water quality has completed its second year. These models were designed as the bridge between water quality, living resource criteria and objectives, and point and nonpoint source load controls programs. The steady state model provided the analytical tools which were used to begin developing abatement and control programs.



WATER QUALITY
Effluent Standards & Guidelines

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

Effluent Standards & Guidelines					
Salaries & Expenses	\$3,094.4	\$3,691.2	\$3,659.7	\$3,669.7	\$10.0
Abatement Control and Compliance	\$3,299.8	\$6,212.4	\$6,137.5	\$6,137.5	
TOTAL	\$6,394.2	\$9,903.6	\$9,797.2	\$9,807.2	\$10.0
TOTAL:					
Salaries & Expenses	\$3,094.4	\$3,691.2	\$3,659.7	\$3,669.7	\$10.0
Abatement Control and Compliance	\$3,299.8	\$6,212.4	\$6,137.5	\$6,137.5	
Effluent Standards & Guidelines TOTAL	\$6,394.2	\$9,903.6	\$9,797.2	\$9,807.2	\$10.0
PERMANENT WORKYEARS					

Effluent Standards & Guidelines	46.1	50.2	49.7	45.7	-4.0
TOTAL PERMANENT WORKYEARS	46.1	50.2	49.7	45.7	-4.0
TOTAL WORKYEARS					

Effluent Standards & Guidelines	48.2	50.2	49.7	45.7	-4.0
TOTAL WORKYEARS	48.2	50.2	49.7	45.7	-4.0



WATER

WATER QUALITY

Effluent Standards and Guidelines

Budget Request

The Agency requests a total of \$9,807,200 supported by 45.7 total workyears for 1990, an increase of \$10,000 and a decrease of 4.0 total workyears from 1989. Of the request, \$3,669,700 will be for the Salaries and Expenses appropriation and \$6,137,500 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$10,000 in the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance appropriation.

EFFLUENT STANDARDS AND GUIDELINES

1990 Program Request

The Agency requests a total of \$9,807,200 supported by 45.7 total workyears for this program, of which \$3,669,700 will be for the Salaries and Expenses appropriation and \$6,137,500 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$10,000 in the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation, and a decrease of 4.0 total workyears. The increase for Salaries and Expenses reflects increased personnel and support costs. The decrease in workyears is due to a transfer to other water quality program priorities.

In 1990, the effluent standards and guidelines program will continue to address toxic dischargers through development of effluent limitations; and guidance or decision documents for the non-regulated Domestic Sewage Study (DSS) industries, including the transportation, hazardous waste treaters, timber, waste oil recovery, machinery manufacturing and rebuilding, and textile industries. A major emphasis in rulemaking activities will be to propose limitations for the pulp and paper and pharmaceutical industries and final regulations for the offshore oil and gas industry, and continue to develop a proposed regulation for the pesticides manufacturing and formulator/package industry segments.

Analytical methods development and validation will continue for the analysis of pesticides, chemicals reported under Title III of the Superfund Amendments and Reauthorization Act, and toxic and hazardous pollutants subject to the Resource Conservation and Recovery Act. The Sample Control Center will continue to provide a wide diversity of analytical capability services to support effluent guidelines development and other intra-agency programs, such as the Chesapeake Bay microlayer sampling; National Sewage Sludge Survey, biomonitoring and bioaccumulation methods and sampling analyses, stormwater survey and toxicity reduction evaluation studies for permitting and enforcement activities. The program will also publish the "List of Lists," which presents an integrated and continually up-to-date list of Agency-wide pollutants of concern and identifies those for which analytical methods are available.

1989 Program

In 1989 the Agency is allocating a total of \$9,797,200 supported by 49.7 total workyears for this program, of which \$3,659,700 is from the Salaries and Expenses appropriation and \$6,137,500 is from the Abatement, Control and Compliance appropriation.

In 1989, the Effluent Guidelines program is developing regulations for the pesticide manufacturers and formulator/package industry, the pulp and paper industry and the offshore and coastal oil and gas industry. Headquarters is continuing to study and expects to initiate the development of regulations on the machinery manufacturing and rebuilding industry, hazardous waste treaters industry and the pharmaceutical industry. Data gathering and analysis have been initiated on one previously regulated industry (onshore oil and gas). The final 304(m) plan, providing a listing of previously regulated and new industries for which effluent guidelines need to be revised or developed, will be published in the Federal Register in 1989.

Headquarters is also providing post-promulgation negotiation and litigation support for placer mining, the nonferrous forming and manufacturing phase II regulatory amendments, and continuing support for the organics effluent limitations published in 1987. Eight comprehensive technical policy workshops are being conducted covering the progress of the pesticides regulations, the effluent limitation associated with the organics regulations, findings of analytical studies and the DSS industries, and the oil and gas regulatory efforts.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,394,200 supported by 48.2 total workyears for this program, of which \$3,094,400 was from the Salaries and Expenses appropriation and \$3,299,800 was from the Abatement, Control and Compliance appropriation.

In 1988, the review of the pulp and paper industry continued. Nine DSS industry decision documents were prepared (transportation, machinery manufacturing and rebuilding, paint, industrial laundries, hospitals, hazardous waste treaters, solvent recyclers, barrel reclaimers and pharmaceuticals). Work on the three remaining DSS industries continued. Final regulations were issued for placer mining and organic chemicals, plastics and synthetic fibers industries; a notice of availability of data and a reproposal of the offshore oil and gas industry (muds and cutting) were developed. The program restudied the pesticides industry by addressing over 420 previously regulated pollutants of concern to the Drinking Water program in the pesticide manufacturing portion of the pesticides industry.

The Agency published a proposed plan in the Federal Register to review previously promulgated regulations and new industries under Section 304(m) and published a report on dioxins in the pulp and paper industry and a treatability study for the pulp and paper industry.

WATER QUALITY
Grants Assistance Programs

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
PROGRAM						

Clean Lakes Program						
Abatement Control and Compliance		\$12,500.0	\$12,500.0	\$2,000.0	-\$10,500.0	
TOTAL		\$12,500.0	\$12,500.0	\$2,000.0	-\$10,500.0	
Control Agency Resource Supplementation (Section 106)						
Abatement Control and Compliance	\$60,915.4	\$67,100.0	\$67,100.0	\$83,200.0	\$16,100.0	
TOTAL	\$60,915.4	\$67,100.0	\$67,100.0	\$83,200.0	\$16,100.0	
TOTAL:						
Abatement Control and Compliance	\$60,915.4	\$79,600.0	\$79,600.0	\$85,200.0	\$5,600.0	
Grants Assistance Programs	TOTAL	\$60,915.4	\$79,600.0	\$79,600.0	\$85,200.0	\$5,600.0



WATER

WATER QUALITY

Grants Assistance Programs

Budget Request

The Agency requests a total of \$85,200,000 for 1990, an increase of \$5,600,000 from 1989. All of the request will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$5,600,000 in the Abatement, Control and Compliance appropriation.

CLEAN LAKES PROGRAM

1990 Program Request

The Agency requests a total of \$2,000,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$10,500,000. This reduction is due to a redirection of these funds to other programs that more broadly address high priority national water quality problems.

The 1990 funds will support state-EPA cooperative agreements under Section 314 of the Clean Water Act. These agreements will be used to support the highest priority Phase I diagnostic feasibility studies, and/or Phase II implementation activities to restore and protect lake water quality. Approximately 10 projects will be selected based on an evaluation of the environmental and public benefits of state Clean Lakes project proposals.

1989 Program

In 1989, the Agency is allocating a total of \$12,500,000 for this program, all of which is from the Abatement, Control and Compliance appropriation. This includes \$7,500,000 for the nationally competitive Clean Lakes Program and \$5,000,000 for the Demonstration Program under Section 314(d).

Under the nationally competitive Clean Lakes Program the Agency is providing financial assistance to conduct 41 state and approximately 4 Tribal lake water quality assessments to evaluate the status and trends in lake water quality, establish a basis of needs for state/Tribal programs and Federal assistance, and provide the Agency with data to determine future program direction. Approximately 20 diagnostic/feasibility studies and lake restoration and protection implementation projects will be conducted to determine the causes and sources of pollution to lakes and implement measures to restore and protect lake water quality. Approximately two post-restoration monitoring studies will be initiated to advance the science of lake restoration, validate methodologies, and determine the longevity and effectiveness of restoration/protection measures.

Under the Demonstration Program, the Agency will conduct approximately 10 projects meeting the legislative objectives of Section 314(d). Priority funding consideration will be given to the lakes named in Section 314 of the

Act, and assistance will be provided consistent with the Clean Lakes Regulation (40 CFR, Part 35 subpart H).

1988 Accomplishments

The Agency did not obligate any funds for the Clean Lakes Program in 1988.

CONTROL AGENCY RESOURCE SUPPLEMENTATION (SECTION 106)

1990 Program Request

In 1990 the Agency requests a total of \$83,200,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$16,100,000 for major initiatives in nonpoint sources; ground water, including pesticides and wellhead protection; wetlands; and to support water quality activities of Indian tribes. The additional increment of Section 106 grant funds will be distributed to states/Indian tribes to initiate and carryout specific activities in each of these areas.

EPA's nonpoint source (NPS) agenda recognizes that preventing and controlling nonpoint source pollution is an important component of overall water nonpoint source pollution control; that control of nonpoint source pollution primarily involves state and local responsibilities, especially as related to land use and development and public/private partnerships; and that effective control of nonpoint source pollution must be carried out in a multi-year, targeted framework. The cornerstone of the national nonpoint source program is the state management program required by the Clean Water Act.

States will use \$7,000,000 to implement approved nonpoint source management programs and will initiate and build upon comprehensive NPS control and protection approaches which include a targeting of their resources, as well as resources available from other sources, to high priority NPS needs. Funds will be provided for selected, targeted watershed management projects to protect/improve critical aquatic habitats. Funds will also support statewide NPS programs, including regulatory programs that address categories of nonpoint pollution most effectively dealt with on a statewide basis (such as forestry practices, construction erosion and stormwater runoff associated with new development). States will continue enhancing their capabilities to identify impaired waters, assess water quality trends and determine the most effective targeted, risk-based options for addressing water quality problems.

Ground-water protection activities will receive a total of \$11,200,000. High priority will be assigned to the management of pesticides to include the development of the hydrologic aspects of pesticide management plans required by EPA's Agricultural Chemicals in Ground-water Strategy. These plans will incorporate prevention measures focused on area-specific differences in ground-water use, value and vulnerability and will include pilot management projects.

Wellhead protection activities will expand as states begin to utilize the Wellhead Protection program as the core element in prioritizing and focusing Federally supported ground-water protection activities (such as underground injection control, nonpoint sources, hazardous waste management, underground storage tanks, and pesticides). Wellhead protection activities will be developed, implemented and tailored to hydrogeologic and environmental conditions. Ground-water protection strategies will be expanded to include the full range of institutional, legal, regulatory, data management and monitoring

activities necessary to protect groundwater from actual or potential sources of contamination, particularly those that are not Federally regulated.

States will use \$1,500,000 for wetlands protection activities which will expand beyond the traditional responsibility for the Section 404 dredge and fill permitting program. In response to the National Wetlands Policy Forum, states will begin to implement the action plan developed in 1989 and develop comprehensive programs using a variety of regulatory and non-regulatory approaches and tools. States will delineate wetlands, establish approvable legal and regulatory authorities and train and maintain adequate personnel.

In 1990, three states will be administering the dredge and fill program and additional states will be developing approvable programs. Section 106 funds will also be used to expand the Section 401 certification program. Wetlands initiatives will include public outreach efforts, additions to the wetlands science technical information base and interagency coordination. State wetlands activities will complement nonpoint source, estuarine and near coastal waters, clean lakes and other surface water protection activities.

Section 106 grants will continue to provide funding assistance for operation of water pollution control programs for 63 state, interstate and territorial agencies and approximately 30 Indian tribes. In 1990, states will continue to review water quality standards and adopt numeric and/or narrative water quality standards for toxic pollutants and toxicity. EPA and the states will work to determine "new" or additional waters to be listed under Section 304(1) and emphasize completion of assessments for rivers, lakes, estuaries, wetland and marine waters. Monitoring and assessment data will be used to identify priority control needs and new toxic/hazardous chemicals, to develop wasteload allocations for permits and to increase sediment contamination information.

States will modify, issue or reissue permits, incorporating toxic pollutants and/or water quality-based criteria or technology-based limitations. Toxic/toxicity limits and/or biomonitoring requirements will be incorporated where Section 304(1) assessments are not completed and where toxic problems have been identified. State program activities will be expanded to include permitting of combined sewer overflows and sludge controls, where needed. Increased state pretreatment program delegations will be encouraged as well as improved Publicly-Owned Treatment Works (POTW) reporting where the state is the control authority. States will inspect POTWs and determine compliance status and initiate enforcement actions against inadequate POTW implementation and/or industrial user noncompliance.

States will ensure compliance of National Pollutant Discharge Elimination System (NPDES) facilities through an effective assessment, monitoring and enforcement program. State enforcement programs will focus on the control of toxic pollutants and protecting municipal compliance infrastructure. Industrial enforcement actions and NPDES and pretreatment inspections will be expanded to include toxicity reduction evaluation methodologies. National Municipal Policy follow-up enforcement actions will focus on municipalities that fail to meet their construction schedules.

1989 Program

In 1989 the Agency is allocating a total of \$67,100,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

Section 106 grants are providing funding assistance for operation of state water pollution control programs for 63 state, interstate and territorial agencies, and approximately 30 Indian tribes. In support of water quality-based permits, states are resolving complex use/criteria revision and modification issues, reviewing antidegradation policies, and developing implementation methods. Special emphasis is being placed on determining priority water segments requiring site-specific criteria, collecting water quality data, and selecting appropriate methods and procedures for use attainability analyses. States are finalizing their lists of waters impaired by toxic discharges and developing individual control strategies to comply with the requirements of Section 304(1).

States are issuing/reissuing expiring NPDES permits to control toxic pollutants and toxicity where water quality is impaired due to toxics/toxicity problems and data are sufficient to establish water quality-based permits. They are also modifying a number of NPDES permits that have not expired, where Section 304(1) assessments have been completed and the need for toxics controls has been determined. Permits are being issued that incorporate toxic/toxicity limits or biomonitoring requirements where Section 304(1) assessments are not yet completed but toxic problems have been identified as well as issuing Best Available Technology (BAT) permits to organic chemical facilities. States are developing sludge programs and working with EPA to incorporate sludge limits and/or impose biomonitoring requirements in some NPDES permits for POTWs and/or other sludge handling facilities. States are assisting POTWs with approved local pretreatment programs to develop and modify new and revised categorical standards and local limits for controlling toxic/hazardous pollutants. Audits are being conducted to determine the adequacy of local pretreatment programs and states are revising their nonpoint source management programs based on EPA reviews.

In the NPDES enforcement program, states are concluding the National Municipal Policy (NMP) effort primarily by use of judicial actions to set schedules for facilities that missed the July 1, 1988 deadline for compliance. In pretreatment enforcement, they are ensuring that industrial users comply with their categorical standards and that local control authorities comply with provisions of their approved programs. States are conducting pretreatment compliance inspections and ensuring that POTWs have adequate control mechanisms in place. They are continuing to conduct both sampling and non-sampling inspections and are being encouraged to use penalties to enforce Best Achievable Technology (BAT) and water quality-based permit requirements to address critical water-quality objectives.

States are reviewing and refining their ground-water protection strategies to focus on the totality of their ground-water protection and concerns. This comprehensive approach enables states to determine clearly the protection measures needed for their ground-water resources, particularly in relationship with the uses of this resource.

1988 Accomplishments

In 1988, the Agency obligated a total of \$60,915,400 for this program, all of which was from the Abatement, Control and Compliance appropriation.

During 1988, states continued to emphasize the control of toxic pollutants. States established technically sound, enforceable water quality standards, conducted use attainability analyses, developed site-specific criteria, adopted criteria for toxic pollutants in standards, and clarified

antidegradation policies and implementation methods. Existing information was identified and evaluated to develop the list of waters impaired by toxic point source pollutants and toxicity, and to develop individual control strategies. States continued to emphasize control of hazardous/toxic pollutants and toxicity from direct dischargers and concentrated on issuing NPDES permits to achieve water quality standards within three years after the establishment of the individual control strategies.

In 1988, permits were modified to incorporate BAT guidelines for organic chemicals, best management practices for nonpoint sources, permit conditions based on biomonitoring and water quality studies, new technology-based requirements, and pretreatment implementation requirements. Some permits with sludge limits based on Best Professional Judgment and/or sludge management practices were also modified. States developed detailed action plans to strengthen their toxic control programs and worked with the Regions to manage a substantial increase in enforcement actions, particularly referrals, due to the 1988 NMP deadline. A shift from manual data entry and review procedures to an automated system of data management for EPA (Permits Compliance System) was accomplished. In 1988, states continued their ground-water protection strategy efforts and Headquarters began to award grants to Indian tribes for water pollution control program development on reservations.



WATER QUALITY
Water Quality Strategies Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Wetlands Protection					
Salaries & Expenses	\$4,227.0	\$4,552.4	\$4,542.9	\$5,183.9	\$641.0
Abatement Control and Compliance	\$2,050.9	\$3,050.0	\$3,015.0	\$3,615.0	\$600.0
TOTAL	\$6,277.9	\$7,602.4	\$7,557.9	\$8,798.9	\$1,241.0
Ocean Disposal Permits					
Salaries & Expenses	\$2,446.7	\$2,602.9	\$2,586.9	\$2,840.6	\$253.7
Abatement Control and Compliance	\$5,036.5	\$4,927.9	\$4,915.1	\$6,915.1	\$2,000.0
TOTAL	\$7,483.2	\$7,530.8	\$7,502.0	\$9,755.7	\$2,253.7
Environmental Emergency Response & Prevention					
Salaries & Expenses	\$1,813.7	\$1,764.3	\$1,766.6	\$1,550.9	-\$215.7
Abatement Control and Compliance	\$1,380.0	\$1,200.0	\$1,182.8	\$1,182.8	
TOTAL	\$3,193.7	\$2,964.3	\$2,949.4	\$2,733.7	-\$215.7
Standards & Regulations					
Salaries & Expenses	\$4,590.0	\$4,507.4	\$4,519.4	\$4,875.1	\$355.7
Abatement Control and Compliance	\$1,901.2	\$3,425.3	\$3,384.0	\$4,804.1	\$1,420.1
TOTAL	\$6,491.2	\$7,932.7	\$7,903.4	\$9,679.2	\$1,775.8
EPA Oil Spills Project					
Salaries & Expenses	\$.3				
TOTAL	\$.3				

WATER QUALITY
Water Quality Strategies Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

TOTAL:

Salaries & Expenses	\$13,077.7	\$13,427.0	\$13,415.8	\$14,450.5	\$1,034.7
Abatement Control and Compliance	\$10,368.6	\$12,603.2	\$12,496.9	\$16,517.0	\$4,020.1
 Water Quality Strategies Implementation	 TOTAL \$23,446.3	 \$26,030.2	 \$25,912.7	 \$30,967.5	 \$5,054.8

PERMANENT WORKYEARS

Wetlands Protection	85.1	100.6	100.4	111.6	11.2
Ocean Disposal Permits	43.9	43.5	43.2	45.1	1.9
Environmental Emergency Response & Prevention	39.9	34.6	34.4	36.8	2.4
Standards & Regulations	85.4	88.8	88.7	94.7	6.0
TOTAL PERMANENT WORKYEARS	254.3	267.5	266.7	288.2	21.5

TOTAL WORKYEARS

Wetlands Protection	90.7	103.8	103.6	111.6	8.0
Ocean Disposal Permits	48.3	45.4	45.1	45.1	
Environmental Emergency Response & Prevention	44.5	37.0	36.8	36.8	
Standards & Regulations	92.4	92.8	92.7	94.7	2.0
TOTAL WORKYEARS	275.9	279.0	278.2	288.2	10.0

WATER

WATER QUALITY

Water Quality Strategies Implementation

Budget Request

The Agency requests a total of \$30,967,500 supported by 288.2 total workyears for 1990, an increase of \$5,054,800 and an increase of 10.0 total workyears from 1989. Of the request, \$14,450,500 will be for the Salaries and Expenses appropriation and \$16,517,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,034,700 in the Salaries and Expenses appropriation and an increase of \$4,020,100 in the Abatement, Control and Compliance appropriation.

WETLANDS PROTECTION

1990 Program Request

The Agency requests a total of \$8,798,900 supported by 111.6 total workyears for this program, of which \$5,183,900 will be for the Salaries and Expenses appropriation and \$3,615,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$641,000 and \$600,000, respectively, and an increase of 8.0 total workyears. The increases reflect the Agency's focus on wetlands issues and support for state programs to protect wetlands.

In 1990, the Agency will continue to work with the Corps of Engineers and other Federal agencies in issuing policies and procedures to clarify or amplify Federal regulatory requirements of the Section 404 program. Implementation of the enforcement memorandum of understanding, the administrative penalty authorities, the EPA wetlands delineation manual, the 404(c) procedural guidance, and the bottomland hardwood guidance will occur. Headquarters will complete guidance for the Regions on state program assumption. The program will implement the Tribal qualification regulations so that qualified and approved Indian Tribes may administer the Section 404 program. The Agency will also work through the Interagency Floodplain Task Force to demonstrate the use of integrated floodplain management planning for reducing flood losses and erosion, protecting wetlands, providing recreational opportunities, and improving stream water quality.

Major activities in 1990 will include more intensive efforts aimed at state program assumption, the use of anticipatory approaches for wetlands protection, and aggressive enforcement activities. Active state 404 program assumption development efforts are expected to increase in 1990 following an information dissemination and education period in 1989. This momentum will be augmented by the grant funds being requested under Section 106 of the Clean Water Act for state program development and administration. In 1990, increased staff resources for the Regions will permit expanded support to states in formulating necessary state legislation and regulations, in training state personnel, and in such direct field assistance activities as wetlands delineation. The Agency will work with the states as they revise their 401

water quality certification processes to reflect wetlands values and functions.

The Agency will increase its efforts to promote and use anticipatory approaches for wetlands protection, particularly in areas where loss rates continue to be unacceptably high and traditional program tools are not satisfactorily addressing the problem. Additional resources will facilitate the expansion of advance identification efforts to additional locations as well as the undertaking of larger projects.

Enforcement activities will expand in 1990, building upon new directions and experience gained under a new enforcement memorandum of understanding with the Army, new guidance on the use of administrative civil penalties, an expanding EPA criminal enforcement program, and greater field experience. EPA's enhanced emphasis on targeting specific geographic areas and/or wetland types for special protection requires an aggressive enforcement and compliance monitoring effort on the part of Regional wetlands staff. The use of administrative penalty orders will increase commensurate with these changes and priorities, and with the Agency's enhanced ability to detect violations through remote sensing, citizen awareness, and improved interagency networks of Federal and state field personnel.

In 1990, the program will work with the Marine and Estuarine Protection Program to implement the improved test methods and procedural guidance on sediment criteria and disposal of dredged material in coastal waters.

1989 Program

In 1989, the Agency is allocating a total of \$7,557,900 supported by 103.6 total workyears for this program, of which \$4,542,900 is from the Salaries and Expenses appropriation and \$3,015,000 is from the Abatement, Control and Compliance appropriation.

Additional program and technical guidance is being developed for wetlands protection with study efforts emphasizing increased scientific knowledge of wetlands values and functions, and increased technical assistance provided to states and local entities. While the Army Corps of Engineers retains the primary responsibility for issuing permits for the disposal of dredged or fill material, the Agency has several key responsibilities in the administration and implementation of the program. These responsibilities include: assuring permit compliance with environmental criteria contained in the Section 404(b)(1) Guidelines; restricting or prohibiting permit issuance if the effects are determined to be environmentally unacceptable; bringing civil or criminal enforcement actions against unauthorized dischargers and permit violators; and delegating to interested and qualified states authority to administer the Section 404 program.

A number of guidance documents and technical manuals are being revised or developed to reflect evolving Agency policy. The final mitigation policy, under the Section 404(b)(1) Guidelines, is being completed. EPA will issue technical guidance on Section 404(c), EPA's "veto" authority over permit issuance. Other technical guidance is being developed for open-water disposal of contaminated spoil and de-minimus discharges. Guidance on the application of Section 404 in bottomland hardwood wetlands is being issued in 1989. The program is developing technical methods and data to support its Section 404 regulatory operations as well. A geographic jurisdiction delineation manual, developed in conjunction with the Corps of Engineers, is being issued in 1989. Manuals on two technical methods resulting from the bottomland hardwood studies

are being published.

Enforcement activities under Section 404 are being emphasized. The program is developing an enforcement practices manual and conducting enforcement training in 1989. The Agency is executing a Memorandum of Agreement on Enforcement with the Department of the Army. The statutorily mandated Report to Congress on Section 404 enforcement mechanisms will also be issued. The Agency is pursuing the potential for field inspection support by other agencies in enforcement actions as well as continuing its efforts to implement the administrative penalty enforcement authorities for Section 404 compliance.

The Agency is working with states, Indian tribes and local entities to promote delegation of the Section 404 administrative responsibilities and other programs to increase wetland protection efforts. Guidance on state assumption of the program is being prepared in 1989. Because of the unique authorities of local governments (e.g., taxation, parks and recreation planning), the program is developing specific initiatives directly related to local government activities for wetlands protection. Guidance for EPA's Regions on advance identification is being issued in 1989.

The National Forum on Wetlands Policy issued its final report and recommendations in November 1988. As a result, the Agency is developing a wetlands action plan and determining appropriate steps to act upon the recommendations for a more comprehensive and integrated national approach to wetlands protection.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,277,900 supported by 90.7 total workyears for this program, of which \$4,227,000 was from the Salaries and Expenses appropriation and \$2,050,900 was from the Abatement, Control and Compliance appropriation.

The final revisions to the Section 404 state program assumption regulations were promulgated, streamlining the process for assumption of Section 404 administrative responsibility by the states. A major workshop on state and local wetlands protection programs was held with participation by all EPA Regions, approximately 40 states, and several Indian tribes.

The policy framework for the Section 404 program was strengthened through technical and policy guidance in 1988. The base program of permit review, enforcement and advanced identification was enhanced by the joint efforts of EPA and the Corps of Engineers. In particular, the enforcement program used the Water Quality Act's administrative penalty enforcement authorities for increased Section 404 compliance.

In 1988 more attention was targeted on geographic areas where the most significant environmental problems were occurring from the loss of wetlands. The Agency worked with the Corps of Engineers and other Federal, state and local government agencies, and identified particularly valuable wetland resources that were threatened by increasing development/conversion pressures. Regions used this process to anticipate future permit needs and problems. Some 30 advance identifications were either completed, underway or planned during 1988.

The National Forum on Wetlands Policy continued during 1988. Other cooperative efforts with Federal agencies and the private sector to enhance scientific knowledge and technical data bases for wetland protection also continued. The Agency initiated an assessment/monitoring project on wetlands status and quality.

OCEAN DISPOSAL PERMITS

1990 Program Request

The Agency requests a total \$9,755,700 supported by 45.1 total workyears for this program, of which \$2,840,600 will be for the Salaries and Expenses appropriation and \$6,915,100 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$253,700 in Salaries and Expenses and \$2,000,000 in Abatement, Control and Compliance, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The increase in Abatement, Control and Compliance reflects a more intensive Agency role in ocean disposal site management and monitoring, increased support for the completion of the New York Bight Restoration Plan, and expanded beach monitoring in Region II.

The Agency will have a more intensive role in the development of environmental impact statements (EISs) for ocean dredged material disposal sites, as well as dredged material disposal site management and monitoring. The Agency's Regional offices will continue implementing the Memoranda of Understanding (MOUs) with the Corps of Engineers (COE) District Offices for dredged material disposal site EISs and site designations. Ongoing management responsibilities will increase as more interim dredged material disposal sites are designated as final sites. There will be further emphasis on data management as the number of continuing and comprehensive site monitoring programs increases.

Work will be continuing on two planning program studies in the New York Bight area. The first of these is the designation of an alternative to the New York Mud Dump Site for the disposal of dredged material, as required by the Water Resources Development Act of 1986. The second study, which is being accelerated to meet the December 1990 completion date in the Marine Plastic Pollution Research and Control Act (MPPRCA), is the New York Bight Restoration Plan, which will include the schedule for pollution control implementation and recommendations for funding and interagency coordination. Additional support will also be provided for monitoring of nearshore waters to address the continuing problems of medical wastes and other floatables washing up on the New York-New Jersey beaches.

Under the recently passed amendments to the Marine Protection, Research and Sanctuaries Act, the Agency will begin collecting fees from dumpers using the 106 Mile Site for disposal of sewage sludge. The fees will be used to support increased work requirements added by the amendments. The Agency will begin implementing the revised Ocean Disposal (OD) regulation which is to be promulgated in final form in 1990, following revisions to meet the requirements of the new amendments and court ordered judgements. There will be an evaluation of the 106 Mile Site for redesignation as a part of the Agency's ongoing monitoring of the site, with a decision on redesignation due in 1991.

1989 Program

The Agency is allocating a total of \$7,502,000 supported by 45.1 total workyears for this program, of which \$2,586,900 is from the Salaries and Expenses appropriation and \$4,915,100 is from the Abatement, Control and Compliance appropriation.

The Agency is continuing development of a comprehensive revision to the OD regulation and development of program guidance and technical protocols, as required. The comprehensive revision is now being developed in response to the changes required under statutory amendments and court judgements. As a component to be included in the comprehensive revision, the Agency is developing a fee system. The Agency's Regional offices are completing negotiations and beginning implementation of MOUs with the COE District offices for the preparation of dredged material disposal site EISs and site designations. The monitoring of the 106 Mile Site is continuing for purposes of site management.

Work is continuing on preparation of a New York Bight Restoration Plan, which is to be completed by December of 1990. Two studies, one relating to the selection of an alternative disposal site to replace the New York Mud Dump and a second to determine the resolution of the problem of plastics disposal in the New York Bight, are also being undertaken. The Mud Dump study including recommendations for an alternate site is to be completed in 1990. The Agency is continuing work on a study with National Oceanic and Atmospheric Administration (NOAA) on the adverse effects of the improper disposal of plastic articles on the marine environment and on methods to reduce the amount of plastic debris. In addition, the Agency is continuing a three-year public outreach and education program, initiated in 1988 in cooperation with NOAA and the Department of Transportation, on the problems of plastic debris in the marine environment and the need for reduction of such debris.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,483,200 supported by 48.3 total workyears for this program, of which \$2,446,700 was from the Salaries and Expenses appropriation and \$5,036,500 was from the Abatement, Control and Compliance appropriation.

The Agency continued development of a comprehensive revision to the OD regulation. A national MOU was signed with the COE, which establishes the basis for cooperative work in the final designation and management of three categories of ocean dredged material disposal sites. The Agency's Regional offices began negotiating and implementing MOUs with the COE District offices to enhance interagency coordination in this activity. The Agency continued to review COE permits for ocean dredged material disposal and issue permits for municipal and industrial ocean disposal. This activity included evaluating and characterizing waste samples on a case-by-case basis.

The New York Bight plastics study -- giving special attention to the effects of plastics debris on beaches, marine life, the environment and coastal waters in the New York Bight -- was completed with a report and recommendations to Congress. A second report to Congress presenting the schedule for the completion of the New York Bight Plan and required reports was also completed. The transfer of sludge dumping from the 12-mile site in the New York Bight to the 106 Mile Site (deepwater municipal sludge dump site) and baseline monitoring of this deepwater site was completed in 1988.

ENVIRONMENTAL EMERGENCY RESPONSE AND PREVENTION

1990 Program Request

The Agency requests a total of \$2,733,700 supported by 36.8 total workyears for this program, of which \$1,550,900 will be for the Salaries and Expenses appropriation and \$1,182,800 will be for the Abatement, Control and Compliance appropriation. This reflects a decrease of \$215,700 in Salaries and Expenses, and no change in Abatement, Control and Compliance and total workyears from 1989.

The oil spills response program has been operational for over a decade; thus, the basic implementation mechanisms are in place and no significant modifications will occur in 1990. The Agency is on 24-hour alert to receive and respond to notifications of accidental releases of oil and other petroleum products. The Agency will receive notifications of oil releases, and it will direct and monitor removals at major oil incidents. EPA will also monitor on-scene removals by potentially responsible parties (PRP) or state and local authorities, conduct Spill Prevention and Control and Countermeasure (SPCC) inspections at non-transportation related facilities, and provide technical assistance to the U.S. Coast Guard on coastal oil spills when the Environmental Response Team (ERT) is activated or when the U.S. Coast Guard makes a specific request. Additionally, funds will support the following operational activities: regulation development, completion of a facilities inventory, data base design and implementation, and development of an inspection guidance manual.

1989 Program

In 1989, the Agency is allocating a total of \$2,949,400 supported by 36.8 total workyears for this program, of which \$1,766,600 is from the Salaries and Expenses appropriation and \$1,182,800 is from the Abatement, Control and Compliance appropriation.

The Agency continues to handle and monitor oil spill notifications; direct response operations at major inland waterway oil spills where there is no other governmental or private entity able or willing to respond; conduct SPCC inspections at facilities where there is some indication that problems exist with the contingency plan and/or plan implementation; and monitor on-scene removal activities of PRPs or state and local authorities at major spills. Moreover, the Agency updates Regional contingency plans; provides advice and technical guidance to state and local officials and PRPs involved in spill response; organizes and staffs Regional Response Team meetings; assists the Federal Emergency Management Agency (FEMA) at major disasters; participates in response and safety training of state and local staff; and maintains response equipment and facilities.

1988 Accomplishments

In 1988, the Agency obligated \$3,193,700 supported by 44.5 total workyears for this program, of which \$1,813,700 was from the Salaries and Expenses appropriation and \$1,380,000 was from the Abatement, Control and Compliance appropriation.

The program received and screened a total of 6,877 notifications of oil spill releases, conducted 999 SPCC inspections, performed on-scene monitoring of 275 oil spills, conducted 52 oil spill responses, and investigated 174 oil

releases. In light of the oil spill at Ashland, a Task Force was formed to develop a set of strategies on ways to improve the SPCC program.

STANDARDS AND REGULATIONS

1990 Program Request

The Agency requests a total of \$9,679,200 supported by 94.7 total workyears for this program, of which \$4,875,100 is from the Salaries and Expenses appropriation and \$4,804,100 is from Abatement, Control Compliance appropriation, an increase of \$355,700 and \$1,420,100 respectively and 2.0 total workyears. The increases will support additional activities to support promulgation of the sludge technical regulation.

In 1990, the water quality standards program will continue to (1) emphasize state adoption of numeric criteria for toxic pollutants, (2) develop methods for implementing state anti-degradation policies, (3) establish priority objectives for the 1991-1993 water quality standards triennium, and (4) oversee the expansion of the standards programs to Indian tribes which qualify for treatment as states. Approximately five final water quality criteria documents will be published and five proposed criteria documents will be released for public review and comment. Up to 35 water quality advisories will be issued to fill the gap between the large number of toxic pollutants and the relatively small number of available criteria documents. Outreach programs will continue to explain standards policies and requirements as well as to provide information to states on the interpretation and use of water quality criteria and advisories, especially for new areas such as sediment and biological criteria. In order to ensure adoption of sediment criteria by the states, EPA will develop criteria and guidance for the 1991-1993 triennium.

In 1990, EPA will complete its response to public comments on the proposed technical regulations for the use and disposal of sewage sludge. The Agency will begin to evaluate the data base from the National Sewage Sludge Survey which, along with public comments, will allow the Agency to begin anticipated reproposal of portions of the technical regulations. As part of this process, additional regulatory options will be prepared.

Additional modeling activities will be conducted and the proposed numerical criteria re-evaluated. The pollutants will be evaluated for impact on human health and the environment and if warranted, will be included in the second round regulation. Draft pathogen criteria documents will also be proposed for public comment. Headquarters will continue to work with the Regions and states on implementation of the first round regulation and conduct several outreach meetings and workshops.

The Agency will provide management oversight to 150 existing clean lake projects. EPA will also review and approve state lake water quality assessments, prepare reports to Congress on the status of lake water quality and progress achieved under the Section 314(d) Demonstration Program, provide technical supplements to the Lake and Reservoir Restoration Guidance manual, and continue efforts to validate various restoration methodologies.

1989 Program

In 1989, the Agency is allocating a total of \$7,903,400 supported by 92.7 total workyears for this program, of which \$4,519,400 is from the Salaries and

Expenses appropriation and \$3,384,000 is from the Abatement, Control and Compliance appropriation.

The Agency is publishing proposed and final freshwater and saltwater human health and aquatic toxicity criteria documents for up to five toxic and nonconventional pollutants. Up to 30 water quality advisories are being issued. Headquarters is assisting the Regions to review state and Indian tribe standards relating to use attainability, site-specific criteria development, antidegradation, and the adoption of criteria for toxic pollutants. A final methodology for deriving sediment criteria values for nonpolar organic contaminants is being developed, as are sediment criteria for six contaminants.

Regions are working with states and Indian tribes to examine the adequacy of all narrative criteria for toxics and the control methods recommended for point source toxic discharges. In support of water quality-based permits, Regions are working with states to resolve complex use/criteria revision and modification issues and differences in state standards. Antidegradation policies are being reviewed for consistency with regulatory requirements and state implementation methods are being developed.

EPA is determining priority water segments that require development of site-specific criteria and assisting states and Indian tribes to collect data and select appropriate methods and procedures for use attainability analyses. Where necessary, Regions are helping states to schedule and conduct use attainability analyses and are providing guidance, Agency data, and examples from other states or Regions.

Regions are continuing to provide guidance and assistance to States for developing assessments of lake water quality and integrating these assessments into Section 305(b) Reports. The Agency will submit a report to Congress on state assessments of lake water quality. Regions are managing existing grants to states for lake assessments and restorations.

In 1989, regulations identifying toxic pollutants in sludge, appropriate management practices, and numerical limitations for 29 pollutants are being proposed. Five technical support documents are being prepared that address five common sludge use and disposal practices; land application, distribution and marketing, landfilling, surface disposal, and incineration. Headquarters will conduct two public hearings and two educational workshops for the proposed regulations. Regional and state staffs are being trained to interpret and apply the sludge technical regulations.

The Agency will evaluate and respond to an anticipated large volume of public comments on the regulation. Analysis of the data base from the National Sewage Sludge Survey will begin and efforts underway to generate incinerator emissions data will continue. Sludge risk assessment methodologies and criteria documents for pathogens are being finalized. Guidance will be developed on sludge testing and monitoring, and technical requirements will be incorporated into state water quality strategies.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,491,200 supported by 92.4 total workyears for this program, of which \$4,590,000 was from the Salaries and Expenses appropriation and \$1,901,200 was from the Abatement, Control and Compliance appropriation.

The program developed and issued criteria and advisories for toxic and non-conventional pollutants concerning human health and aquatic life, with emphasis on the human health effects of ingesting aquatic life where bioaccumulation of toxics is of concern. Efforts focused on reviewing state adopted standards for consistency with regulations and guidance and aiding Regions, states, and Indian tribes to interpret and apply regulatory requirements to implement the surface water toxic control program.

Draft sludge regulations were prepared for Agency review to cover five reuse/disposal options: land application, distribution and marketing, landfilling, incineration, and surface disposal. Five technical support documents were prepared that address disposal options. A risk assessment methodology for pathogens found in sludge is being drafted and criteria documents initiated. The Agency initiated the National Sewage Sludge Survey designed to gather information on sewage sludge quality and sludge use/disposal practices from a national perspective. The program conducted an outreach program on the proposed sludge regulations and the proposed technology-based pathogen reduction regulation. Education/implementation efforts with the states/Regions were initiated.



WATER QUALITY
Water Quality Monitoring & Analysis

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
PROGRAM						

Coastal Environment Management						
Salaries & Expenses	\$2,962.8	\$4,148.4	\$4,138.6	\$6,480.6	\$2,342.0	
Abatement Control and Compliance	\$7,671.1	\$11,378.5	\$11,371.5	\$16,851.5	\$5,480.0	
TOTAL	\$10,633.9	\$15,526.9	\$15,510.1	\$23,332.1	\$7,822.0	
Water Quality Monitoring & Analysis						
Salaries & Expenses	\$8,193.8	\$8,053.7	\$7,865.2	\$9,309.1	\$1,443.9	
Abatement Control and Compliance	\$4,165.3	\$6,659.9	\$6,517.4	\$6,905.4	\$388.0	
TOTAL	\$12,359.1	\$14,713.6	\$14,382.6	\$16,214.5	\$1,831.9	
TOTAL:						
Salaries & Expenses	\$11,156.6	\$12,202.1	\$12,003.8	\$15,789.7	\$3,785.9	
Abatement Control and Compliance	\$11,836.4	\$18,038.4	\$17,888.9	\$23,756.9	\$5,868.0	
Water Quality Monitoring & Analysis	TOTAL	\$22,993.0	\$30,240.5	\$29,892.7	\$39,546.6	\$9,653.9

PERMANENT WORKYEARS

Coastal Environment Management	57.5	88.8	88.5	124.0	35.5
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WATER QUALITY
Water Quality Monitoring & Analysis

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

	(DOLLARS IN THOUSANDS)				
Water Quality Monitoring & Analysis	163.9	157.9	155.1	162.5	7.4
TOTAL PERMANENT WORKYEARS	221.4	246.7	243.6	286.5	42.9
TOTAL WORKYEARS -----					
Coastal Environment Management	63.2	91.3	91.0	124.0	33.0
Water Quality Monitoring & Analysis	173.7	165.5	162.5	162.5	
TOTAL WORKYEARS	236.9	256.8	253.5	286.5	33.0

WATER

WATER QUALITY

Water Quality Monitoring and Analysis

Budget Request

The Agency requests a total of \$39,546,600 supported by 286.5 total workyears for 1990, an increase of \$9,653,900 and an increase of 33.0 total workyears from 1989. Of the request, \$15,789,700 will be for the Salaries and Expenses appropriation and \$23,756,900 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$3,785,900 in the Salaries and Expenses appropriation and an increase of \$5,868,000 in the Abatement, Control and Compliance appropriation.

COASTAL ENVIRONMENT MANAGEMENT

1990 Program Request

The Agency requests a total of \$23,332,100 supported by 124.0 total workyears for this program, of which \$6,480,600 will be for the Salaries and Expenses appropriation and \$16,851,500 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$2,342,000 in Salaries and Expenses, \$5,480,000 in Abatement, Control and Compliance, and 33.0 in total workyears. The increases expand support for the twelve ongoing estuary projects and will allow the Agency to initiate four additional projects in the National Estuary Program (NEP), expand support for the Gulf of Mexico initiative, expand support for the Near Coastal Waters (NCW) technology transfer activities, and expand support for the implementation of the Clean Water Act (CWA), as amended, and Section 403(c) Ocean Discharge Criteria Evaluation (ODCE) program. The NEP will also be supported by \$2,000,000 provided through the CWA Section 205(1) set-aside from the Construction Grants appropriation of one-third of 1.5 percent for implementation of the program authorized in CWA Section 320.

For NCW initiatives, the Agency will continue working with the National Oceanic and Atmospheric Administration (NOAA) and the states on the national assessment of environmental problems, the organization of data for application in ongoing Agency programs and the assessment of innovative nonpoint control programs. The national network to exchange information on NCW problems, management tools, and estuary programs, including the Chesapeake Bay, the Great Lakes, and NCW pilot projects, will be expanded to include management training for local project managers. The Agency will expand support for the Gulf of Mexico initiative, including further development of the initiative's "Framework for Action" and additional monitoring and data collection to assess environmental health and to establish a base for policy/regulatory options.

The NEP will provide expanded support and oversight to twelve estuary projects, including six 1985-86 projects -- San Francisco Bay, Albemarle-Pamlico Sounds, Narragansett Bay, Long Island Sound, Puget Sound, and Buzzards Bay. The Buzzards Bay project will complete its Comprehensive Conservation and Management Plan (CCMP) by mid-1990 and will begin the plan implementation phase

of the program, while the other five projects will continue the intensive environmental resource characterization and CCMP development phases. The six 1988 projects -- New York-New Jersey Harbor, Delaware Bay, Delaware Inland Bays, Sarasota Bay, Galveston Bay, and Santa Monica Bay -- will begin the intensive characterization phase. Four new projects, selected on the basis of national significance and with priority consideration given to project sites referenced in the amended CWA, will be designated in 1990 to expand the program's geographic coverage, to develop further project expertise, and to test remedial approaches developed in earlier estuary projects. Of the total Abatement, Control and Compliance request, \$13,180,000 will be used for the NEP.

The Section 301(h) program will focus on the evaluation of monitoring programs and permit reissuance. The Regions will make final waiver determinations for the remaining first round applications, and preliminary work will be completed to reissue permits which expire in 1991, including the requirement for secondary treatment equivalency determinations.

Through a targeted strategy, the Agency will expand its efforts to bring National Pollutant Discharge Elimination System (NPDES) permittees into compliance with Section 403(c) ODCE requirements, consistent with the recommendations of the 1989 report to Congress.

1989 Program

In 1989, the Agency is allocating a total of \$15,510,100 supported by 91.0 total workyears for this program, of which \$4,138,600 is from the Salaries and Expenses appropriation and \$11,371,500 is from the Abatement, Control and Compliance appropriation. The NEP is also supported by \$4,705,000 provided through the Section 205(1) set-aside from the Construction Grants appropriation.

In addition to ongoing estuarine activities, the Agency is continuing the assessment of NCWs to determine environmental status and water quality trends and to identify NCWs needing management attention. In a parallel effort, three ongoing pilot projects and three new pilot projects are being conducted in coastal and marine areas to demonstrate innovative solutions for identified major environmental problems. The Agency is also continuing to support development of the "Framework for Action" for the Gulf of Mexico Initiative to begin resource characterization and assessment activities.

The NEP is supporting twelve projects in 1989. Three of the 1985 projects are developing their CCMP, and the remaining 1985 and 1986 projects are continuing their environmental resources characterization work. The six 1988 NEP projects are beginning Planning Initiative activities. Resources support conducting pollutant load assessments and completing assessments of status and trends. Systemwide monitoring will be developed in each program to determine the environmental effectiveness of actions taken. Priority Demonstration Plans to implement targeted clean-up strategies in selected estuary projects will receive assistance using Section 205(1) set-aside resources.

In the Section 301(h) marine discharge monitoring program, most first round application waiver decisions are to be completed by the end of 1989, and waiver recipients are beginning to implement required water quality monitoring programs. In the Section 403(c) program, the Agency is developing a targeted strategy for bringing NPDES permittees into compliance with ocean discharge

criteria. A Permit Writer's Guide is being developed for use in conducting Section 403(c) evaluations and addressing point source discharges to NCW.

1988 Accomplishments

In 1988, the Agency obligated a total of \$10,633,900 supported by 63.2 total workyears for this program, of which \$2,962,800 was from the Salaries and Expenses appropriation and \$7,671,100 was from the Abatement, Control and Compliance appropriation. The NEP was also supported by \$7,680,000 provided through the Section 205(1) set-aside from the Construction Grants appropriation.

The Agency began an assessment of all NCWs to determine environmental status and water quality trends and to identify NCWs needing management attention. In a parallel effort, three NCW pilot projects were begun in coastal and marine areas to demonstrate innovative solutions to identified major environmental problems. The Agency also established an institutional framework for the Gulf of Mexico initiative to identify and address priority water quality and related environmental problems.

The NEP was expanded to twelve projects. State/EPA agreements which documented the need to convene Management Conferences and to establish a schedule for meeting the purposes and requirements of Section 320 were negotiated for each of the six ongoing projects. The six new projects selected at the end of 1988 began Planning Initiative activities. Project resources supported the increased emphasis required for conducting pollutant load assessments and completing assessments of status and trends. Systemwide monitoring was developed in each project to determine the environmental effectiveness of actions taken. Priority Demonstration Plans to demonstrate targeted clean-up strategies in the initial six estuaries received implementation assistance using Section 205(1) set-aside resources. Program guidance was developed by the Agency for a number of activities, including Governor's Nominations procedures, technology transfer manuals, a Program Primer, a Financial Management Primer, a Management Handbook, and the Section 320 Grant regulation. An interagency agreement with NOAA was developed to implement Section 320(j) regarding coordinated estuarine research and management.

The Agency continued to provide technical support for the review of the Section 301(h) marine discharge monitoring programs. The focus of the program was shifted to the management and analysis of monitoring data from waiver recipients, and meeting the statutory requirement for determinations of secondary equivalency for toxics. The Agency also continued to support the preparation of Section 403(c) ODCes for general permits for offshore oil and gas facilities. Technical assistance was provided nationally for preparation of selected Evaluations.

WATER QUALITY MONITORING AND ANALYSIS

1990 Program Request

The Agency requests a total of \$16,214,500 supported by 162.5 total workyears for this program, of which \$9,309,100 will be for the Salaries and Expenses appropriation and \$6,905,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,443,900 for the Salaries and Expenses appropriation, an increase of \$388,000 for the Abate-

ment, Control and Compliance appropriation, and no change in total workyears. The increases will support assistance to states to build toxics monitoring and assessment capacity, and a technology transfer study to modernize the Agency's water quality data systems.

The program will continue a high priority effort to assure effective implementation of Section 304(1) of the Clean Water Act, providing assistance and oversight in addressing deficiencies in state submissions. Where states fail to act, the Agency will develop and promulgate lists of waters impaired by toxics and develop wasteload allocations (WLAs) for disapproved individual control strategies (ICSSs). The program will continue providing guidance and assistance to states developing total maximum daily loads (TMDLs) and WLAs, including a focus to control nonpoint sources.

Based on Phase I of the bioaccumulation study, the program will design Phase II in 1990 to investigate high priority problems identified and develop guidance for establishing point source controls needed for protection of human health related to fish consumption. Also in 1990 the program will conduct sampling to determine the nature of sediment contamination problems where build-up of toxic pollutants is suspected of causing adverse impact on aquatic life and causing bioaccumulation problems. The program will conduct an aquatic life survey to assess accomplishments and trends in protecting fisheries and other aquatic life from toxic effects of water pollution.

The surface water monitoring program will encourage states to adopt more cost-effective approaches, such as rapid biological assessment techniques, and to use citizen volunteers as part of state monitoring support networks. Regional symposia and workshops will be held to address specialized issues, such as nonpoint source monitoring and assessment, estuarine monitoring, sediment and bioaccumulation issues. The program will also assist states in the monitoring of toxic pollutants and toxicity, including use of technology transfer workshops and specific technical assistance projects to support state laboratory analytical capacities for toxics. The program will continue with ongoing activities designed to strengthen state assessments and monitoring, including trend assessment techniques, use of the 305(b) Waterbody System, and improvements in water quality data management to enable integration with other Agency data bases.

1989 Program

In 1989, the Agency is allocating a total of \$14,382,600 supported by 162.5 total workyears for this program, of which \$7,865,200 is from the Salaries and Expenses appropriation and \$6,517,400 is from the Abatement, Control and Compliance appropriation.

Headquarters is issuing regulations that govern the Section 304(1) listing of waters impaired by toxic pollutants. A major program emphasis is to provide adequate technical assistance and oversight to enable states to develop complete, approvable submissions. Headquarters is performing national priority assessments of toxic problems of national concern; for example the presence of dioxin in fish tissues is expected to lead to control strategies for bleached kraft pulp and paper mills. Three reports to Congress and a study required by Sections 308(g), 516, 524 and 525 of the CWA are being completed.

Regions are assuring consistency in the Section 304(1) review process and continuing to assist states in conducting WLAs and other analyses to develop ICSSs for waters with point source, related toxics problems. Regions continue

to conduct sampling to assist the national bioaccumulation study and, where bioaccumulation problems are discovered, to assist states in developing effective control strategies.

The Regions are responsible for approving or disapproving TMDLs and WLAs developed by the states under Section 303(d), and for producing TMDLs/WLAs if states fail to do so. The Regions are updating technical agreements which have been established with most states concerning toxic pollutants. These revisions govern states' methodologies for development of TMDLs/WLAs and the Regions' approach to the review, approval, and disapproval of state developed limits. The Regions continue to guide and assist states in developing TMDLs/WLAs for complex situations with point sources, such as lake and estuarine areas and rivers with multiple dischargers, with particular emphasis on control of toxic pollutants.

1988 Accomplishments

In 1988, the Agency obligated a total of \$12,359,100 supported by 173.7 total workyears for this program, of which \$8,193,800 was from the Salaries and Expenses appropriation and \$4,165,300 was from the Abatement, Control and Compliance appropriation.

Headquarters issued guidance governing the Section 304(1) listing of waters impaired by toxic pollutants and provided technical assistance to enable states to develop complete, approvable submissions. The program began to implement recommendations for improving EPA and state long-term monitoring programs from the Surface Water Monitoring Study, including holding a National Symposium on Water Quality Assessment and working directly with the states. In addition, the 1988 state Section 305(b) Reports were completed with an improved format, and a supporting Waterbody System was established as well as a steering committee to oversee and guide data systems.

Regions conducted sampling to assist the national bioaccumulation study, and where bioaccumulation problems were discovered, assisted the states in developing effective control strategies. Regions also provided direct guidance and assistance to states for preparing biennial Water Quality Inventory reports under Section 305(b) and implementing the Waterbody System.

WATER QUALITY
Municipal Source Control

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Municipal Waste Treatment Facility Construction						
Salaries & Expenses	\$19,907.8	\$21,425.7	\$21,234.3	\$21,517.3	\$283.0	
Abatement Control and Compliance	\$32,763.4	\$21,628.4	\$21,368.2	\$19,868.2	-\$1,500.0	
TOTAL	\$52,671.2	\$43,054.1	\$42,602.5	\$41,385.5	-\$1,217.0	
Waste Treatment Operations & Maintenance						
Salaries & Expenses	\$1,384.3	\$1,477.3	\$1,477.3	\$1,544.9	\$67.6	
TOTAL	\$1,384.3	\$1,477.3	\$1,477.3	\$1,544.9	\$67.6	
TOTAL:						
Salaries & Expenses	\$21,292.1	\$22,903.0	\$22,711.6	\$23,062.2	\$350.6	
Abatement Control and Compliance	\$32,763.4	\$21,628.4	\$21,368.2	\$19,868.2	-\$1,500.0	
Municipal Source Control	TOTAL	\$54,055.5	\$44,531.4	\$44,079.8	\$42,930.4	-\$1,149.4

PERMANENT WORKYEARS

Municipal Waste Treatment Facility Construction	402.5	423.8	421.4	430.0	8.6
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WATER QUALITY
Municipal Source Control

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

	(DOLLARS IN THOUSANDS)				
Waste Treatment Operations & Maintenance	28.0	30.6	30.6	31.5	9
TOTAL PERMANENT WORKYEARS	430.5	454.4	452.0	461.5	9.5
TOTAL WORKYEARS					

Municipal Waste Treatment Facility Construction	439.6	449.4	447.0	430.0	-17.0
Waste Treatment Operations & Maintenance	30.1	31.5	31.5	31.5	
TOTAL WORKYEARS	469.7	480.9	478.5	461.5	-17.0



WATER

WATER QUALITY

Municipal Source Control

Budget Request

The Agency requests a total of \$42,930,400 supported by 461.5 total workyears for 1990, a decrease of \$1,149,400 and a decrease of 17.0 total workyears from 1989. Of the request, \$23,062,200 will be for the Salaries and Expenses appropriation and \$19,868,200 will be for the Abatement, Control and Compliance appropriation, an increase of \$350,600 and a decrease of \$1,500,000 respectively.

MUNICIPAL WASTE TREATMENT FACILITY CONSTRUCTION

1990 Program Request

The Agency requests a total of \$41,385,500 supported by 430.0 total workyears for this program, of which \$21,517,300 will be for the Salaries and Expenses appropriation and \$19,868,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$283,000 and a decrease of \$1,500,000, respectively, and a decrease of 17.0 workyears. The increase for Salaries and Expenses reflects increased personnel and support costs. The decrease in Abatement, Control and Compliance and workyears reflects reduced funding required for Needs Survey reports and State Revolving Fund (SRF) guidance, a reduction of \$1,000,000 to 1989 enacted funding for operator training, and streamlined Construction Grants/SRF management.

In 1990, EPA will be managing dual wastewater treatment grant programs with emphasis on the completion of ongoing construction grants projects and implementation/oversight of SRF programs. Peak SRF workload is expected in 1990 with 40 operational programs and 11 new programs coming on line. The highest program priority in the Regions will be the negotiation and award of initial SRF grants and the conduct of first annual program reviews. In 1990, Headquarters will promulgate final SRF regulations and update policy and guidance documents based on experience gained from 1989 awards and program reviews. Headquarters will also encourage states to use SRFs for expanded wastewater management uses. Letter of credit payment issues and outlay management will continue to require significant management attention.

Traditional construction grants management workload and state oversight responsibilities will remain high, but begin to decline in 1990, due to the large number of projects initially funded during 1987-89. Regions will maintain essential emphasis on construction grants management activities and will address a workload of approximately 5,500 grant projects. The funds requested for the Corps of Engineers (COE) Interagency Agreement (IAG) will purchase 245 workyears of effort to provide construction management assistance to EPA and the states. The Indian grants program will receive increased support to assure management and project integrity needs are fully met.

In 1990, EPA will undertake important initiatives to enhance the effectiveness of technology transfer and outreach programs and to address vital infrastructure issues. Headquarters will maintain information on refinements, advances, and cost-effectiveness of publicly-owned treatment works (POTWs) technologies to lower costs and improve performance. The waste treatment and drinking water programs will continue to engage in a cooperative effort to provide information and assistance on financing and technology to hard-pressed small communities. Making use of national organizations and the Small Flows Clearinghouse, guidance materials on technology selection and financing methods will be provided to local officials.

Headquarters will provide management strategies and information to address sulfide sewer corrosion following the 1989 Report to Congress. The 1990 SRF Report to Congress will help to identify needed policy, regulatory, and legislative changes. The report will provide an inventory of facilities in significant noncompliance and an estimate of cost needed to bring these facilities back into compliance. The 1990 Needs Survey will be nearly complete and Needs Survey data will be integrated with permits and grants information systems to enable consolidated POTW reporting. EPA will provide \$800,000 to support state operator training programs. Activities associated with management of the operator training program are described in the Operations and Maintenance program element.

1989 Program

In 1989, the Agency is allocating \$42,602,500 supported by 447.0 total workyears for this program, of which \$21,234,300 is from the Salaries and Expenses appropriation and \$21,368,200 is from the Abatement, Control and Compliance appropriation.

1989 is a critical year for the program with a maximum SRF implementation effort and significant continuing responsibility for the management and oversight of almost 6,000 ongoing construction grants projects. Since Title VI requires states to commit 1989 funds to SRFs, essentially all states are expected to submit capitalization grant applications. Major efforts are required to effectively review state applications, negotiate payment schedules and award initial grants. With contractor support, Regions and states are receiving training, information and assistance for development, implementation and oversight of SRF programs.

Traditional construction grants management and state oversight responsibilities remain significant activities during 1989. EPA is monitoring state delegation status and performing the remaining nondelegated project management responsibilities. In addition, implementation of new construction grants provisions, including grants to Indian tribes, is continuing. The \$15,300,000 allocated for the COE Interagency Agreement (IAG), combined with carryover funds, is supporting 281 workyears to provide construction management assistance to EPA and the states. The 1988 Needs Survey is being completed and work is underway on the 1990 Needs Survey.

The program emphasizes a unified approach to POTW toxics management by improving RCRA/Superfund coordination in treating wastes from sites addressed under those programs. POTW technologies are being evaluated and information disseminated to states, POTWs and architect/engineering firms on the effectiveness of innovative/alternative (I/A) as well as conventional treatment technologies. To support local self-sufficiency, especially among small communities that need construction, EPA widely disseminates information

on cost- and environmentally-effective treatment technologies and local financial management approaches. Significant ongoing financial support to the Small Flows Clearinghouse contributes to a much expanded community outreach assistance program.

The technical reports to Congress on sulfide corrosion and rainfall-induced infiltration of sewers are being completed. The Agency is targeting \$1,800,000 to selected states that provide effective on-site operations and compliance assistance to small POTWs.

1988 Accomplishments

In 1988, the Agency obligated a total of \$52,671,200 supported by 439.6 total workyears for this program, of which \$19,907,800 was from the Salaries and Expenses appropriation and \$32,763,400 was from the Abatement, Control and Compliance appropriation.

EPA moved toward implementing Title VI requirements for establishment of self-sufficient SRF programs and other new statutory initiatives. Eight states received SRF capitalization grants and 4 additional grant applications were under review. Guidance, regulations and training were provided to states and Regions for development, implementation and oversight of SRFs. Headquarters completed a State Funding Study, identifying the funding needs for state management of water programs, and provided information on alternative financing mechanisms to advance states' efforts toward development of innovative financing techniques to address state funding needs.

Effective Federal and state management and oversight of the construction grants program continued with 634 construction grant awards in 1988 for a total active project workload of 6,244. New construction grants statutory programs were implemented, including Indian tribes, accelerated disputes resolutions and "turnkey" projects. The \$15,500,000 obligated for the Corps of Engineers IAG purchased 281 workyears of support to EPA and the states to ensure technical and fiscal integrity of construction projects. The Indian Needs Survey and the 1988 Needs Survey were in final stages of completion. Headquarters and Regions reviewed a total of 11 proposed Advanced Treatment (AT) projects with incremental costs over \$3,000,000. Marine Combined Sewer Overflow awards totaling \$23,100,000 were made for 8 projects.

Work on technologies evaluations and information transfer for both I/A and conventional designs continued. The Agency obligated \$1,800,000 to promote state operator training programs to assist small communities. The scope of the Small Flows Clearinghouse was also expanded with funds available from the construction grants reallocation process, under the provisions of Section 104(q).

WASTE TREATMENT OPERATIONS AND MAINTENANCE

1990 Program Request

The Agency requests a total of \$1,544,900 supported by 31.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$67,600 in the Salaries and Expenses appropriation and no change in workyears. The increase reflects increased personnel and support costs.

Stable staffing, together with the resources requested to continue operator training grants under the Municipal Waste Treatment Facilities Construction program, reflect the Agency's commitment to the development of effective state operations and maintenance (O&M) and operator training programs, and support to improved minor municipal facilities compliance.

With \$800,000 in grant funds, state and EPA Regional staff will be able to provide on-site compliance assistance and operator training at about 270 minor POTWs. Operator training grants will be provided to states which have developed comprehensive municipal compliance programs. EPA will promote improved local user charge and financial management systems and identification of O&M compliance problems through effective diagnostic evaluation and laboratory quality assurance and quality control (QA/QC) programs. In addition, the Agency will provide guidance, information and oversight to assist the states and communities to strengthen local O&M programs for improved sludge, toxics, and Innovative/Alternative and conventional technologies management.

EPA will continue to recognize superior facilities through enhancements to its National and Regional O&M Excellence Awards programs. Staff will review project performance certifications submitted by new facilities and monitor needs and corrective actions.

1989 Program

In 1989, the Agency is allocating a total of \$1,477,300 supported by 31.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

Information and guidance continue to be issued to promote more cost-effective O&M activities funded under Sections 104(g), 106 and 205(g). States and EPA Regions expect to use \$1,800,000 to provide on-site O&M assistance to 581 small communities. EPA is conducting a program to train on-site inspectors to diagnose and assist resolution of small communities' financial and user charge system problems where these contribute to O&M and permit compliance problems.

EPA will continue with the highly successful O&M Excellence Awards program which was expanded to recognize model nondischarging facilities. The Agency plans to make 66 Regional awards and eight national awards. Likewise, the national sludge beneficial use awards programs will continue. Staff are reviewing project performance certifications and implementing minor POTW QA/QC programs.

1988 Accomplishments

In 1988, the Agency obligated \$1,384,300 supported by 30.1 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

EPA and the states obligated \$1,800,000 to provide on-site compliance assistance to 688 small communities and returned 385 to compliance. Over 2,800 plants have been assisted to date, with over 1,587 having returned to compliance and most of the others operating with improved performance. EPA also studied factors limiting plant performance in small communities and reported its findings to state and local officials and the architect and engineering community.

EPA expanded its O&M Excellence Awards program to recognize model non-discharging facilities. The Agency made 64 Regional and eight national awards recognizing outstanding facilities. In addition, a video on O&M management factors contributing to outstanding plant performance was produced and a brochure of success stories emphasizing innovative approaches to problem solving for state and local officials and plant operators was issued.



Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>WATER QUALITY</u>	3-1
ENFORCEMENT	
Water Quality Enforcement	3-65
Water Quality Permit Issuance	3-69



WATER QUALITY
Water Quality Enforcement

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Water Quality
Enforcement

Salaries & Expenses	\$18,188.9	\$18,426.1	\$18,223.0	\$19,228.0	\$1,005.0
Abatement Control and Compliance	\$1,638.1	\$1,607.0	\$1,579.6	\$2,579.6	\$1,000.0
TOTAL	\$19,827.0	\$20,033.1	\$19,802.6	\$21,807.6	\$2,005.0

TOTAL:

Salaries & Expenses	\$18,188.9	\$18,426.1	\$18,223.0	\$19,228.0	\$1,005.0
Abatement Control and Compliance	\$1,638.1	\$1,607.0	\$1,579.6	\$2,579.6	\$1,000.0

Water Quality Enforcement	TOTAL	\$19,827.0	\$20,033.1	\$19,802.6	\$21,807.6	\$2,005.0
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PERMANENT WORKYEARS

Water Quality Enforcement	378.5	385.6	382.4	394.7	12.3
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TOTAL PERMANENT WORKYEARS	378.5	385.6	382.4	394.7	12.3
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TOTAL WORKYEARS

Water Quality Enforcement	409.8	408.3	404.7	394.7	-10.0
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TOTAL WORKYEARS	409.8	408.3	404.7	394.7	-10.0
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WATER

WATER QUALITY

Water Quality Enforcement

Budget Request

The Agency requests a total of \$21,807,600 supported by 394.7 total workyears for 1990, an increase of \$2,005,000 from 1989. Of the request, \$19,228,000 will be for the Salaries and Expenses appropriation and \$2,579,600 will be for the Abatement, Control and Compliance appropriation, an increase of \$1,005,000 for Salaries and Expenses, an increase of \$1,000,000 for Abatement, Control and Compliance, and a decrease of 10.0 total workyears.

WATER QUALITY ENFORCEMENT

1990 Program Request

The Agency requests a total of \$21,807,600 supported by 394.7 total workyears for this program, of which \$19,228,000 will be for the Salaries and Expenses appropriation and \$2,579,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,005,000 for the Salaries and Expenses appropriation, an increase of \$1,000,000 for the Abatement, Control and Compliance appropriation, and a decrease of 10.0 total workyears. The increase for Salaries and Expenses reflects increased personnel and support costs. The increase for Abatement, Control and Compliance will support data systems integration and increased enforcement and monitoring of toxic controls. The decrease of 10.0 workyears reflects the use of more efficient enforcement mechanisms.

In 1990, EPA's priority will be to improve municipal compliance rates of constructed facilities with final effluent limits. All but 85 major municipal facilities will have completed construction to meet final effluent limits. EPA and states will continue to monitor these facilities to ensure compliance with their construction schedules. For those POTWs which have completed construction, EPA will assess compliance using diagnostic inspections, identify causes of noncompliance, and establish corrective action plans.

In support of municipal compliance, the pretreatment program will increase enforcement against publicly owned treatment works (POTWs) which fail to implement their approved pretreatment programs. EPA will continue to rely on approved states and POTWs to ensure that industrial users (IUs) comply with pretreatment standards. Where there is no approved local or state program, EPA will continue to identify categorical IUs, monitor compliance through review of semi-annual reports, and conduct inspections where environmental harm is suspected. In serious cases of noncompliance, appropriate enforcement action will be taken, including criminal enforcement.

In 1990, EPA will place a high priority on enforcing toxic permit requirements and will implement the Compliance Monitoring and Enforcement Strategy for Toxics Control, in cooperation with the states. EPA will also

initiate enforcement of permits for combined sewer overflows and enforcement of sludge requirements in permits.

The Permit Compliance System (PCS), the primary data base for the NPDES program, will be used to generate Quarterly Noncompliance Reports; automatically review Discharge Monitoring Reports (DMR); and track performance of POTWs in implementing their pretreatment programs. Additional resources will be used to enhance PCS capabilities by implementing new graphics and mapping components and other information management techniques to facilitate the integration and exchange of data with other automated systems.

Regions will maintain effective inspection programs by conducting 1,900 inspections of municipal and industrial permittees and will continue to emphasize a "timely and appropriate" enforcement response in all cases of significant noncompliance. Contractual and technical support will be provided for approximately 120 judicial cases, many of which will be pretreatment or cases involving discharge of toxic pollutants. Other non-NPDES administrative enforcement activities will include inspections of facilities with spill prevention control plans and enforcement against those not in compliance.

1989 Program

In 1989, the Agency is allocating a total of \$19,802,600 supported by 404.7 total workyears for this program, of which \$18,223,000 is from the Salaries and Expenses appropriation and \$1,579,600 is from the Abatement, Control and Compliance appropriation.

EPA is giving high priority to ensuring compliance with enforceable construction schedules by the approximately 420 major National Municipal Policy (NMP) facilities which have not yet completed construction to meet final effluent limits. In 1989, the Agency will enforce these schedules through referrals for civil judicial action or contempt actions. Major municipal permittees in unapproved states that fail to comply with final permit limits are also being addressed.

The pretreatment enforcement program will concentrate on evaluating some 1,500 POTWs to assure effective implementation of approved pretreatment programs. Data provided through the pretreatment tracking system indicates that approximately 40 percent of POTWs are failing to adequately implement at least one significant component of their program. The Agency will use formal enforcement action against the most serious cases of POTW noncompliance with approved pretreatment programs.

EPA will continue to improve and expand compliance enforcement data management capabilities through the use of Permit Compliance System (PCS). In 1989, all EPA Regions will produce Quarterly Noncompliance Reports on PCS and enter data to the Pretreatment Permits and Enforcement Tracking System.

Regions will assess administrative penalties in all categories of noncomplying permittees and in conjunction with orders requiring corrective action. Regions continue to respond to all cases of significant noncompliance with enforcement action, where necessary, and are addressing nearly all cases of industrial noncompliance. Inspections are being used to verify the compliance status of municipal and industrial permittees, with all major municipal and industrial facilities inspected annually.

1988 Accomplishments

In 1988, the Agency obligated a total of \$19,827,000 supported by 409.8 total workyears for this program, of which \$18,188,900 was from the Salaries and Expenses appropriation and \$1,638,100 was from the Abatement, Control and Compliance appropriation.

The highest priority in 1988 was to achieve the goals of the NMP. As of the July 1, 1988 deadline, 71 percent of the NMP universe had completed construction to comply with final effluent limits -- bringing the overall compliance rate for municipal facilities to 87 percent. Only 13 of the original 1,479 major NMP facilities were not yet on an enforceable schedule or referred for judicial enforcement action. Enforceable construction schedules have also been established for approximately 70 percent of the 1,700 minor municipal facilities needing schedules. Judicial action was initiated against 54 POTWs as a means of establishing schedules in 1988.

Pretreatment activity focused on monitoring the compliance of approved programs, and enforcement actions were brought against noncomplying POTWs and IUs. EPA conducted a total of 798 pretreatment inspections and referred 23 pretreatment judicial actions to the Department of Justice. Additionally, EPA issued 222 administrative orders and 25 administrative penalty orders for violation of pretreatment requirements. The Pretreatment Permits and Enforcement Tracking System became fully operational and EPA developed and implemented criteria for evaluating and reporting POTW noncompliance with pretreatment implementation requirements. Regional and state personnel were trained in monitoring and inspection techniques and POTWs with pretreatment programs were trained to enforce pretreatment requirements.

Enforcement of Section 311 oil and hazardous substance spill requirements included 81 referrals to the U.S. Coast Guard for assessment of civil penalties and 50 administrative actions for violations of Spill Prevention Control and Countermeasure plan requirements.

WATER QUALITY
Water Quality Permit Issuance

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS)					
PROGRAM -----					
Permit Issuance					
Salaries & Expenses	\$12,329.4	\$13,605.4	\$13,501.3	\$14,145.0	\$643.7
Abatement Control and Compliance	\$5,278.7	\$8,528.7	\$8,311.6	\$7,311.6	-\$1,000.0
TOTAL	\$17,608.1	\$22,134.1	\$21,812.9	\$21,456.6	-\$356.3
TOTAL:					
Salaries & Expenses	\$12,329.4	\$13,605.4	\$13,501.3	\$14,145.0	\$643.7
Abatement Control and Compliance	\$5,278.7	\$8,528.7	\$8,311.6	\$7,311.6	-\$1,000.0
Water Quality Permit Issuance	TOTAL \$17,608.1	\$22,134.1	\$21,812.9	\$21,456.6	-\$356.3

PERMANENT WORKYEARS

Permit Issuance	282.7	326.2	323.9	340.3	16.4
TOTAL PERMANENT WORKYEARS	282.7	326.2	323.9	340.3	16.4

TOTAL WORKYEARS

Permit Issuance	298.2	343.0	340.3	340.3
TOTAL WORKYEARS	298.2	343.0	340.3	340.3



WATER

WATER QUALITY

Water Quality Permit Issuance

Budget Request

The Agency requests a total of \$21,456,600 supported by 340.3 total workyears for 1990, a decrease of \$356,300 from 1989. Of the request, \$14,145,000 will be for the Salaries and Expenses appropriation and \$7,311,600 will be for the Abatement, Control and Compliance appropriation, an increase of \$643,700 and a decrease of \$1,000,000, respectively.

PERMIT ISSUANCE

1990 Program Request

The Agency requests a total of \$21,456,600 supported by 340.3 total workyears for this program, of which \$14,145,000 will be for the Salaries and Expenses appropriation and \$7,311,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$643,700 in Salaries and Expenses, a decrease of \$1,000,000 in Abatement, Control and Compliance, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Abatement, Control and Compliance reflects the completion of the stormwater and the Hilo-Hamakua Sugar Cane Processing Mills studies to Congress, and completion of the state toxic control program assessments.

During 1990, emphasis will be placed on issuing or modifying permits to facilities to incorporate discharge limitations where surface water toxic assessments have been completed and new or revised toxic or toxicity controls are needed; where state Individual Control Strategies (ICSs) have been disapproved; where Section 403(c) permits are expiring; and to incorporate sludge requirements in expiring major municipal permits. EPA will complete approval/denial of the remaining 301(g) requests and fundamentally different factors (FDF) requests from organic chemical and pesticide plants for direct/indirect dischargers.

EPA will continue to review full and partial NPDES programs, including Indian tribes and program modifications. EPA will assist states in developing sludge programs and in issuing and modifying permits to include toxic/toxicity controls. Contract support will assist in issuing an extraordinarily large number of NPDES state permits that will expire in 1990.

In 1990, EPA will continue to conduct detailed on-site POTW pretreatment program reviews, with appropriate follow-up actions, to ensure effective implementation. EPA will assist POTWs to develop/modify local limits to control toxics and hazardous pollutants in accordance with revised pretreatment regulations and as required by ICSs and changes in sludge disposal standards. Assistance will be provided to POTWs in revising control mechanisms for significant industrial users in those states where EPA is the Control Authority.

EPA will promulgate revisions to the NPDES regulation to reflect statutory changes contained in the Water Quality Act of 1987. EPA will complete Congressionally required studies to establish procedures and methods to control stormwater discharges, to determine the nature and extent of pollutants from stormwater discharges, and to mitigate their impacts on water quality.

1989 Program

In 1989, the Agency is allocating a total of \$21,812,900 supported by 340.3 total workyears for this program, of which \$13,501,300 is from the Salaries and Expenses appropriation and \$8,311,600 is from the Abatement, Control and Compliance appropriation.

During 1989, emphasis continues on control of hazardous and toxic pollutants from direct dischargers. Priority is given to completing the issuance of ICSs to major and minor dischargers listed as required by Section 304(1) of the Clean Water Act, as amended. Remaining permits are being issued to include toxicity-based or water quality-based limits based on human health protection, toxicity reduction evaluations, revised local pretreatment programs, and/or Best Available Technology (BAT) for organic chemicals. To ensure protection of critical habitats, EPA will focus on issuing permits to major near coastal water dischargers that expire in 1989.

EPA will continue to review NPDES program and program modification requests. In addition, EPA will assist states to develop sludge programs and strengthen their NPDES state toxic control programs in accordance with action plans.

In 1989, EPA will assist POTWs to develop/modify local limits to control toxics and hazardous pollutants in accordance with revised pretreatment regulations and as required by ICSs and changes in sludge disposal standards. EPA will continue to audit POTWs to evaluate application of categorical standards, local limits and issuance of control mechanisms. Guidance and contract assistance will be provided to implement revisions to the general pretreatment regulations based on the Pretreatment Implementation Review Task Force; revise/develop local limits to include additional toxic pollutant limits, including organics; conduct toxicity reduction evaluations and assess toxicity related spills; and apply organic chemical categorical pretreatment standards. Workshops and seminars will be provided on toxicity testing, biomonitoring, and state/POTW pretreatment implementation.

The Agency is proposing NPDES regulation revisions to reflect changes contained in the Water Quality Act of 1987. State program and permitting regulations for sludge will also be promulgated.

1988 Accomplishments

In 1988, the Agency obligated a total of \$17,608,100 supported by 298.2 total workyears for this program, of which \$12,329,400 was from the Salaries and Expenses appropriation and \$5,278,700 was from the Abatement, Control and Compliance appropriation.

Contract resources were used to develop individual control strategies, evaluate state toxic control assessments, develop local limits and water quality-based limits in POTW permits, conduct audits of approved local and NPDES state pretreatment programs, and develop NPDES programs and program

modifications, especially sludge programs. Workshops and seminars were held on pretreatment implementation.

EPA issued a total of 336 major permits, of which 176 were industrial and 160 were municipal. Additionally, a total of 837 permits were issued for minor facilities.

In 1988 work continued on reviewing several states' program requests or program modification requests. No program approvals or program modifications approvals and no partial programs were requested during 1988. During 1988, EPA performed 146 local pretreatment program audits and another 175 were performed by pretreatment states.



4. Drinking Water

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>DRINKING WATER</u>	4-1
RESEARCH AND DEVELOPMENT	
Drinking Water Research	4-7
Scientific Assessment.	4-11
Monitoring Systems and Quality Assurance	4-12
Health Effects	4-13
Environmental Engineering and Technology	4-15
Environmental Processes and Effects.	4-16
ABATEMENT AND CONTROL	
Drinking Water Criteria, Standards and Guidelines	4-18
Criteria, Standards and Guidelines	4-20
Drinking Water Implementation.	4-22
Drinking Water State Program Resource Assistance.	4-25
Public Water Systems Supervision Program Grants.	4-26
Underground Injection Control Program Grants	4-28
Special Studies and Demonstrations	4-30
Drinking Water Management	4-32
Public Water Systems Supervision Program Assistance.	4-34
Underground Injection Control Program.	4-36
Ground-Water Protection.	4-39
ENFORCEMENT	
Drinking Water Enforcement.	4-44



DRINKING WATER

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$34,758.0	\$36,109.9	\$35,888.5	\$40,088.1	\$4,199.6
Abatement Control and Compliance	\$59,900.1	\$60,863.0	\$60,678.8	\$67,128.1	\$6,449.3
Research & Development	\$12,332.4	\$11,364.2	\$11,235.6	\$11,738.4	\$502.8
TOTAL, Drinking Water	\$106,990.5	\$108,337.1	\$107,802.9	\$118,954.6	\$11,151.7

PERMANENT WORKYEARS	687.6	720.3	716.5	766.7	50.2
TOTAL WORKYEARS	746.8	745.5	741.1	766.7	25.6
OUTLAYS	\$105,357.4	\$103,886.0	\$103,369.2	\$112,690.6	\$9,321.4

AUTHORIZATION LEVELS
The Safe Drinking Water Act of 1986 reauthorized this program at a level of \$145,150.0 for 1988, \$199,570.0 for 1989, and \$199,570.0 for 1990.



WATER

DRINKING WATER

OVERVIEW AND STRATEGY

The goals of the Safe Drinking Water Act (SDWA) as amended in 1986 are to assure that public water supplies are free of contaminants that may cause health risks and to protect and prevent the endangerment of ground-water resources that serve as drinking water supplies. EPA has developed a twofold approach to this legislative mandate that includes protecting drinking water at the tap and preventing contamination of ground-water sources of drinking water supplies. The 1986 Amendments provide for an expanded Federal role in protecting drinking water at the tap, mandating new national standards and Federal responsibility to enforce them in the event of state inaction. EPA has established a Five-Year Strategy for Drinking Water Protection, which integrates the standard setting, implementation of new program responsibilities, and ultimate enforcement authority components of this new Federal mandate. The Strategy is intended to accomplish the goal of establishing a new, comprehensive level of drinking water protection into the twenty-first century.

EPA is also focusing on the prevention of contamination of valuable/vulnerable ground-water resources by assisting states in the development and implementation of comprehensive ground-water protection strategies. These strategies will address both the full range of actual/potential sources of ground-water contamination and provide for wellhead protection activities in the areas around public water systems. In addition, EPA is targeting specific activities to protect drinking water sources from the harmful effects of injection of wastes and other fluids; and, in particular, is developing a strategy to address the vast number of diverse "miscellaneous," or Class V, injection wells.

Drinking Water Standard Setting

The first step in implementing a new, comprehensive level of drinking water protection is to establish the framework, promulgating National Primary Drinking Water Regulations (NPDWRs) on any contaminants "known or anticipated to occur" in public water systems (PWSs) that may have any adverse human health effects. The SDWA Amendments prescribe a stringent timetable for regulating 83 contaminants referenced in the law, a subsequent triennial cycle for listing and regulating additional contaminants, and specific treatment technology requirements.

EPA is proceeding with the required level of regulatory protection by promulgating NPDWRs, setting the full array of standards and/or treatment requirements mandated as fast as the state of scientific and technological knowledge permits. These standards will entail the full measure of public health protection prescribed by Congress; that is, Maximum Contaminant Levels (MCLs) that represent the level of maximum feasible health protection. Not only does this directly enhance protection at the tap, but also provides a comprehensive array of standards for use as health protection benchmarks in other environmental programs. At the same time, EPA will take into account the potential burden of the wholesale increase in the number of regulatory

requirements, building into the standards themselves both flexibility and streamlined administrative requirements. To the extent they are compatible with SDWA mandates, these standards will promote states' freedom of action. The accompanying monitoring and reporting requirements are staggered, giving smaller systems more time to prepare for monitoring and compliance.

In 1990, EPA will be in the midst of the first effort to provide a comprehensive regulatory framework, pursuing NPDWRs for the required chemical, radionuclide and microbiological contaminants and a treatment technology rule for surface source systems. Among these are rules for three critical contaminant risks: 1) the Surface Water Treatment Rule and a revised microbiological monitoring MCL to address infectious disease risks; 2) a corrosion-control treatment rule and lead MCL to address the palpable health risks of lead in drinking water; and 3) MCLs for radon and other radionuclides. The outstanding major health risk will be addressed with a complex of disinfection requirements, disinfectant MCLs and standards for disinfectant by-products, along with further standards for pesticides and other contaminants listed in 1988.

PWS Program Implementation

EPA depends heavily on the states to ensure drinking water protection. EPA and the states must lay the foundation to achieve the best possible start on implementing the succession of new and revised regulatory requirements by reducing current non-compliance to a minimum. To this end, the states are pursuing a strategy that combines traditional and new approaches to address both aspects simultaneously. In addition, the states are taking into account the prevalence of numerous, dispersed small community, non-transient and non-community systems that require individual attention in order to achieve compliance.

EPA's first priority is to support the expansion of state program capabilities which are essential to implement the growing regulatory framework. States are being encouraged to invest in developing new approaches to interacting with systems and other interested parties in order to increase their effectiveness. EPA has been promoting the concept of mobilization--attaining the maximum level of third-party participation and service -- as the most cost-effective way to both promote autonomous system compliance and to address the primary causes of system non-compliance (which include customer resistance to higher rates, inadequate technical expertise, and poor training). One challenge is simply to reach the thousands of small systems so that a large degree of inadvertent non-compliance can be averted.

States have had notable success in maintaining and increasing systems' compliance through their traditional programs, which themselves reflect a balance of preventative measures (regular surveillance of systems' operations, review of planned facility changes, operator certification), technical assistance and an enforcement deterrent. Ultimately, however, additional requirements mean increased non-compliance. In the future, EPA will have to establish enforcement priorities on the basis of health risk, focusing on the prevalence of microbiological, lead, radionuclide and by-product contamination. As a first step, EPA has defined the category of Significant Non-compliance, which now governs enforcement priorities, on the basis of health risk.

Underground Injection Control

EPA and 40 state primacy programs will continue to maintain regulatory coverage of 293,000 injection wells. The subset of Class V wells encompasses a wide variety of different well types that resist uniform regulatory treatment, ranging from radioactive waste-disposal wells, service station and industrial drainage and disposal wells, to irrigation return wells. The Agency is targeting its initial efforts on two to five "high-risk" Class V categories, such as automobile service station wells and industrial process disposal wells, based on their contamination potential. Possible regulatory controls of Class V practices could range in stringency from outright banning, closure, permitting, enforcement and publication of best management procedures, to outreach and education.

Addressing the emerging problem of Class V wells complements and reinforces the Agency's efforts in regulating the principal classes of injection wells. Class II (oil and gas production and storage-related injection wells) compliance evaluations will continue as the remaining states complete their first five-year cycle of Class II file reviews. The program will emphasize both permitting and ensuring compliance with permit and statutory requirements of other UIC categories, particularly Class I and II. Where a state does not or cannot respond to violations in a timely and appropriate manner, EPA will take enforcement action.

Ground-Water Protection

In 1990, EPA will emphasize the use of state ground-water protection strategies as the framework for a comprehensive approach to protecting and preserving ground-water resources. EPA will focus on expanding the capability of states to address the total range of activities that protect ground water from actual and potential sources of contamination, particularly those that are not Federally regulated. State ground-water protection strategies will concentrate on integrating states' protection efforts with Federal programs to assure compatibility between state and Federal activities. In response to the Agency's Agricultural Chemicals in Ground-Water Strategy, a key EPA initiative in 1990, ground-water protection strategies will serve as the basis for state efforts to address agricultural, especially pesticide, contamination of ground water. Through guidance and technical assistance from both the Agency ground-water protection and pesticides programs, states will be developing pesticide management plans that provide for highly tailored prevention measures based on area-specific differences in ground-water use, value, and vulnerability.

A central feature of a comprehensive ground-water protection strategy includes activities targeted to high priority ground-water resources. A primary example of this type of targeting is the protection of areas and fields surrounding wells of public water systems, commonly known as wellhead protection. Thus, in 1990, EPA will assist states in developing wellhead protection programs and incorporating these activities into the implementation of their ground-water protection strategies. The Agency will continue to provide extensive direct assistance to states in the delineation of wellhead protection areas. In addition, EPA will work with states in the assessment of specific sources of contamination and the development of risk management strategies and options for multiple sources of ground-water contamination.

In 1990, EPA will also assist states in building and strengthening their capabilities in the area of ground-water information management. EPA will

implement a minimum data element set to assure that ground-water data collected by or on behalf of the Agency is comparable, compatible, and readily accessible to Regional, state, and local managers, as well as other Federal agencies. EPA will continue to enhance and modernize STORET and other EPA data management systems to make them more user-friendly and, therefore, more available to a larger number of state and local ground-water decision-makers. The Agency will also continue to enhance and encourage the use of geographic information systems as a means of identifying the most critical sources of contamination in high priority ground-water protection areas.

Research and Development

The Agency will continue to focus on research of subsurface transport and fate processes that influence ground-water contamination. In 1990, research will emphasize the processes by which the transportation of subsurface water is facilitated by certain chemical solvents, biological transformations, and oxidation/reduction reactions that focus on the behavior of complex mixtures. The results of the research will allow better human exposure assessments from ground-water contamination. EPA will also develop an integrated research effort focusing on new approaches to delineate and manage ground-water quality within wellhead protection areas.

The research program will continue to support methods development to detect ground-water contaminants, understand and predict their behavior, evaluate the viability and cost-effectiveness of in-situ restoration as a clean-up alternative, and support UIC regulatory efforts.

The Agency will develop data on the chemistry and toxicology of disinfectants used in place of chlorine, primarily ozone and chloramine and their reaction by-products. EPA anticipates that in the near future many municipalities will be forced to begin using ozone and chloramine as well as combinations of the two chemicals for drinking water disinfection. Currently, very little is known about either the spectrum of their by-products during disinfection or the toxicological properties of these chemicals and/or mixtures of chemicals. Research will begin to develop and validate biomarkers to quantify exposure and effects, with particular emphasis placed on the gastro-intestinal tract where the first exposure to chemicals occurs.

DRINKING WATER

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase + Decrease - 1990 vs. 1989

PROGRAM ACTIVITIES				
Incremental Outputs				
UIC Permit Determinations				
- for existing and new facilities, by primacy states.....	8,014	6,539	6,539	0
- for existing and new facilities, by EPA.....	582	590	590	0
UIC MIT Testing.....	25,736	28,226	28,226	0
UIC File Review.....	24,896	12,750	12,750	0
Enforcement Actions - PWS:				
Inspections.....	n/a	n/a	n/a	
Notices of Violation.....	258	358	354	-4
Administrative Orders.....	161	285	285	0
Civil Litigation (new).....	9	8	8	0
Criminal Litigation.....	0	0	0	0
Enforcement Actions - UIC:				
Inspections.....	74,592	60,382	60,382	0
Notices of Violation.....	n/a	n/a	n/a	
Administrative Orders.....	93	108	123	+15
Civil Litigation (new).....	4	4	4	0
Criminal Litigation.....	0	0	0	0
Cumulative Outputs				
PWS Primacy States.....	54	54	54	0
UIC Primacy States (full and partial programs).....	33/6	35/5	36/4	0
Designated Sole Source Aquifers.....	48	56	60	+4



Research and Development

SECTION TAB

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>DRINKING WATER</u>	4-1
RESEARCH AND DEVELOPMENT	
Drinking Water Research	4-7
Scientific Assessment.	4-11
Monitoring Systems and Quality Assurance	4-12
Health Effects	4-13
Environmental Engineering and Technology	4-15
Environmental Processes and Effects.	4-16



DRINKING WATER
Drinking Water Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
PROGRAM						

Scientific Assessment -						
Drinking Water						
Salaries & Expenses	\$450.2	\$477.6	\$436.2	\$513.0	\$76.8	
Research & Development	\$294.9	\$296.8	\$271.8	\$271.8		
TOTAL	\$745.1	\$774.4	\$708.0	\$784.8	\$76.8	
Monitoring Systems &						
Quality Assurance -						
Drinking Water						
Salaries & Expenses	\$1,657.9	\$2,150.8	\$2,145.5	\$2,351.2	\$205.7	
Research & Development	\$1,569.3	\$1,747.3	\$1,747.3	\$1,747.3		
TOTAL	\$3,227.2	\$3,898.1	\$3,892.8	\$4,098.5	\$205.7	
Health Effects -						
Drinking Water						
Salaries & Expenses	\$3,312.0	\$2,971.7	\$2,947.9	\$3,228.8	\$280.9	
Research & Development	\$4,970.9	\$3,934.9	\$3,834.9	\$3,534.9	-\$300.0	
TOTAL	\$8,282.9	\$6,906.6	\$6,782.8	\$6,763.7	-\$19.1	
Environmental						
Engineering &						
Technology - Drinking						
Water						
Salaries & Expenses	\$3,092.2	\$3,263.7	\$3,179.9	\$3,459.5	\$279.6	
Research & Development	\$2,092.7	\$1,961.1	\$1,957.5	\$1,960.3	\$2.8	
TOTAL	\$5,184.9	\$5,224.8	\$5,137.4	\$5,419.8	\$282.4	
Environmental Processes						
& Effects - Drinking						
Water						
Salaries & Expenses	\$1,554.4	\$1,584.8	\$1,584.8	\$1,958.0	\$373.2	
Research & Development	\$3,404.6	\$3,424.1	\$3,424.1	\$4,224.1	\$800.0	
TOTAL	\$4,959.0	\$5,008.9	\$5,008.9	\$6,182.1	\$1,173.2	
TOTAL:						
Salaries & Expenses	\$10,066.7	\$10,448.6	\$10,294.3	\$11,510.5	\$1,216.2	
Research & Development	\$12,332.4	\$11,364.2	\$11,235.6	\$11,738.4	\$502.8	
Drinking Water Research	TOTAL	\$22,399.1	\$21,812.8	\$21,529.9	\$23,248.9	\$1,719.0

DRINKING WATER
Drinking Water Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PERMANENT WORKYEARS					

Scientific Assessment - Drinking Water	9.1	9.0	8.0	8.0	
Monitoring Systems & Quality Assurance - Drinking Water	28.3	37.9	37.9	37.8	-.1
Health Effects - Drinking Water	61.3	58.3	58.3	58.2	-.1
Environmental Engineering & Technology - Drinking Water	59.9	57.8	56.4	56.3	-.1
Environmental Processes & Effects - Drinking Water	27.2	29.3	29.3	29.2	-.1
TOTAL PERMANENT WORKYEARS	185.8	192.3	189.9	189.5	-.4
TOTAL WORKYEARS					

Scientific Assessment - Drinking Water	9.4	9.0	8.0	8.0	
Monitoring Systems & Quality Assurance - Drinking Water	28.3	37.9	37.9	37.8	-.1
Health Effects - Drinking Water	65.6	58.3	58.3	58.2	-.1
Environmental Engineering & Technology - Drinking Water	61.9	57.8	56.4	56.3	-.1
Environmental Processes & Effects - Drinking Water	30.1	29.3	29.3	29.2	-.1
TOTAL WORKYEARS	195.3	192.3	189.9	189.5	-.4

DRINKING WATER

Drinking Water Research

Principal Outputs by Objective

Objective 1: Develop Drinking Water Standards Based on Health Effects Through Risk Assessment Studies

- 1990: o Develop supporting documentation for health advisories and criteria documents (Scientific Assessment)
- o Report on the mechanistic approaches to assess the interactions of drinking water contaminants (Health)
- o Report on cancer risks associated with the disinfection of drinking water (Health)

- 1989: o Develop health advisories and criteria documents (Scientific Assessment)
- o Report on the carcinogenic and reproductive effects of disinfectants/by-products (Health)
- o Report on cancer risks associated with the chlorination of drinking water (Health)
- o Report on the chemistry and toxicology of chlorinated hydroxyfurones (Health)

- 1988: o Update and finalize 19 Phase II chemicals and 14 Phase V chemicals (Scientific Assessment)
- o Report on target organ toxicity of disinfectants and disinfectant by-products (Health)
- o Report on target organ toxicity of chemicals tested for health advisory development (Health)

Objective 2: Provide Engineering Technologies and Monitoring Data for Drinking Water Standards

- 1990: o Report on lead leaching from water faucets (Engineering)
- o Develop and verify Legionella inactivation data for public plumbing systems (Engineering)

- 1989: o Report on radiation methods validation and intercomparison studies program for drinking water radiation quality assurance (Monitoring)
- o Provide systems performance procedures for on-site evaluation and certification of drinking water monitoring laboratories (Monitoring)
- o Report on pilot plant disinfection and disinfection by-products with ozone combined with chloramines and chlorine (Engineering)
- o Report on treatment techniques to remove radon from small water supplies (Engineering)

- 1988: o Final standardized methods for synthetic organic chemicals and pesticides for the underground water survey (Monitoring)
o Internal report on in-house pilot studies for control of disinfectant by-products (Engineering)

Objective 3: Provide Scientific Methods and Data for Protection of Ground-Water Resources

- 1990: o Report on ozonization products in drinking water (Environmental Processes)
o Provide improved methods for predicting contaminant movement and transformation (Monitoring)
o Develop laser-induced fluorescence for monitoring groundwater by fiber optics (Monitoring)
- 1989: o Report on sources of variability affecting groundwater monitoring data (Monitoring)
o Report on fiber optics for monitoring groundwater contaminants (Monitoring)
o Report on impacts of unregulated sources of groundwater contamination in wellhead protection areas (Environmental Processes)
- 1988: o Evaluate and develop of laser-induced fluorescence for monitoring groundwater contamination using fiber optics (Monitoring)
o Report on in-situ restoration of an aquifer contaminated with halogenated organic contaminants (Environmental Processes)
o Report on hydro chemical characterization of a saline aquifer used for waste disposal (Environmental Processes)
o Report on the occurrence of synthetic chemical constituents in Distribution and Marketing sludge products (Health)

DRINKING WATER

Drinking Water Research

Budget Request

The Agency requests a total of \$23,248,900 supported by 189.5 total work-years for 1990, an increase of \$1,719,000 and a decrease of 0.4 in total workyears from 1988. Of the request, \$11,510,500 will be for the Salaries and Expenses appropriation and \$11,738,400 will be for the Research and Development appropriation, increases of \$1,216,200 and of \$502,800, respectively.

Program Objectives

The Drinking Water research program provides support to States and the EPA Office of Drinking Water (ODW) in implementing the Safe Drinking Water Act (SDWA). This program consists of the following objectives:

Objective 1: Provide Scientific Basis for Drinking Water Standards.

Research in this activity provides health assessment information to support the Office of Drinking Water in revising regulations to control drinking water contaminants under the SDWA. The health research program also assists States in ascertaining causes of outbreaks from waterborne infectious diseases and determining the hazard to humans from exposure to infectious agents through drinking water.

Objective 2: Provide Engineering Technologies and Monitoring Data for Drinking Water Standards. Research supporting this objective provides analytical procedures to monitor drinking water contaminants. In addition, engineering research will evaluate treatment processes and costs to support ODW regulatory decision-making.

Objective 3: Provide Scientific Methods and Data for Protection of Ground-Water Resources. Work in this category will provide the scientific basis for the protection of underground drinking water sources to implement Section 1421 and 1414 of the SDWA. These efforts are coordinated with the Pesticides and Hazardous Waste Programs.

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$784,800 supported by 8.0 total workyears for this program, of which \$513,000 will be for the Salaries and Expenses appropriation and \$271,800 will be for the Research and Development appropriation. This represents an increase of \$76,800 in the Salaries and Expenses appropriation, with no change in the Research and Development appropriation and total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs.

Provide Scientific Basis for Drinking Water Standards. This program provides quantitative health risk assessments, from exposure to drinking water contaminants, for the development of drinking water standards. It includes review and disposition of comments received for drinking water health assessment/criteria documents on Phase IV, V, and VI chemicals, continuing documentation for the health advisory programs, providing technical support and assistance to regions and states; maintaining state-of-the-art methodology for assessment of potential risk to human health from exposure to constituents found in drinking water.

1989 Program

In 1989, the Agency is allocating a total of \$708,000 supported by 8.0 total workyears for this program, of which \$436,200 is from the Salaries and Expenses appropriation and \$271,800 is from the Research and Development appropriation.

In 1989, this program will finalize documentation for 14 Phase V chemicals, initiate criteria documents on 8 Phase VI chemicals. Respond to comments on Phase II documents, finalize criteria on 3 Phase IV chemicals and assess typical mixtures found in drinking water as a result of the disinfection process. The program will also provide technical support to regions and states.

1988 Accomplishments

In 1988, the Agency obligated a total of \$745,100 supported by 9.4 total workyears for this program, of which \$450,200 was from the Salaries and Expenses appropriation and \$294,900 was from the Research and Development appropriation.

Major accomplishments included the finalization of documents on the Phase II chemicals, preparation of the external review draft documents on the Phase V chemicals and the revision (following QA/QC review) of health advisories of 30 unregulated VOCs listed under Section 1445 SDWA.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$4,098,500 supported by 37.8 total workyears for this program, of which \$2,351,200 will be for the Salaries and Expenses appropriation and \$1,747,300 will be for the Research and Development appropriation. This represents an increase of \$205,700 in the Salaries and Expenses appropriation, no change in the Research and Development appropriation, and an reduction of 0.1 in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Provide Engineering Technologies and Monitoring Data for Drinking Water Standards. This activity will continue to provide analytical procedures for

use by the Agency, states municipalities and system operators to monitor contaminants to assure compliance with Maximum Contaminant Levels (MCLs) (Sec. 1401 of the SDWA). The program will provide system performance procedures for on-site evaluations and certification of drinking water monitoring laboratories. Quality assurance activities will continue for all offices and laboratories involved in data collection.

Provide Scientific Methods and Data for Protection of Groundwater Resources. Research will provide both technical information and improved methods for predicting contaminant movement and transformation to better assess human exposure from groundwater contamination. Research includes evaluating identification and assessment technologies for improving injection well practices, assessing fluid movement from injection wells and developing laser induced fluorescence for monitoring groundwater by fiber optics.

1989 Program

In 1989, the Agency is allocating a total of \$3,892,800 supported by 37.9 total workyears for this program, of which \$2,145,500 is from the Salaries and Expenses appropriation and \$1,747,300 is from the Research and Development appropriation.

In 1989, the monitoring program is expediting methods validation work to meet the new drinking water regulations for organic chemical contaminants. The program provides analytical procedures to monitor drinking water contaminants including development of procedures for analysis of radioactive contaminants and improved coliform analysis methods.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,227,200 supported by 28.3 total workyears for its monitoring and quality assurance program in drinking water, of which \$1,657,900 was from the Salaries and Expenses appropriation and \$1,569,300 was from the Research and Development appropriation.

In support of the revised National Primary Drinking Water Regulations (NPDWR), chemical and microbiological methods were developed and/or standardized for the determination of volatile, semi-volatile, and non volatile organic compounds, coliform bacterial contamination, radionuclides, and groundwater contamination. Interlaboratory comparisons were performed to assess the performance of chemical microbiological methods for analysis of contaminants regulated under NPDWR and laboratories were certified to do drinking water analysis. Quality assurance support was provided for EPA, State, Regional, and contract laboratories.

HEALTH EFFECTS

1990 Program Request

The Agency requests a total of \$6,763,700 supported by 58.2 total workyears for this program, of which \$3,228,800 will be for the Salaries and Expenses appropriation and \$3,534,900 will be for the Research and Development appropriation. This represents an increase of \$280,900 and a decrease of

\$300,000, respectively. An reduction of 0.1 workyear was made. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in the Research and Development appropriation reflects the completion of toxicological testing on the major set of chemicals identified for regulation under the SDWA. The workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Provide Scientific Basis for Drinking Water Standards. The health research program will support the ODW in its effort to develop recommended drinking water Maximum Contaminant Level Goals (MCLGs) and MCLs for twelve disinfectants and more than eighteen types of disinfection by-products will be considered. In response to the Safe Drinking Water Act Amendments, research will be conducted to isolate, identify, synthesize and characterize the toxicological effects of major disinfectant by-products that present the highest probable health risks.

Heavy focus has been placed on the effects of disinfectants to be used as an alternative to chlorine, such as ozone and chloramine, individually and in combined mixtures. Research will begin to develop and validate biomarkers to quantify exposure and effects, particularly on the gastrointestinal track where the first exposure to chemicals occurs.

Risk extrapolation methodology will be developed for determining human exposure to chemical mixtures as they occur in source waters for drinking water. Epidemiology studies will continue to be conducted to determine the association between the use of disinfectants and chronic health effects (cancer and cardiovascular disease).

1989 Program

In 1989, the Agency allocating a total of \$6,782,800 supported by 58.3 total workyears for this program, of which \$2,947,900 was from the Salaries and Expenses appropriation and \$3,834,900 was from the Research and Development appropriation.

The research program supports the Office of Drinking Water's efforts to develop maximum contaminant levels and health advisories for specific chemicals found in drinking water. The effort develops toxicological data to support development of maximum contaminant level goals and fill gaps for the first set of 83 contaminants for which regulations are required. This includes research on disinfectants, and other organic and inorganic contaminants. Other research is being conducted to improve risk extrapolation methods.

1988 Accomplishments

In 1988, the Agency obligated a total of \$8,282,900 supported by 65.6 total workyears for its monitoring and quality assurance program in drinking water, of which \$3,312,000 was from the Salaries and Expenses appropriation and \$4,970,900 was from the Research and Development appropriation.

Several of the major accomplishments were: a report on target organ toxicities for chemicals evaluated for drinking water health advisories; report on the analysis of nongenotoxic liver cancer from drinking water

contaminants and research determining genotoxic effects of organic chemicals in drinking water for incorporation into MCLGs; a report on research that determined target organ toxicities of disinfectants and disinfectant by-products required under the Safe Drinking Water Act Amendments; and a report on an epidemiological determination of health hazards associated with low-level occurrence of viruses.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$5,419,800 supported by 56.3 total workyears for this program, of which \$3,459,500 will be for the Salaries and Expenses appropriation and \$1,960,300 will be for the Research and Development appropriation. This represents an increase of \$279,600 in the Salaries and Expenses appropriation, with an increase of \$2,800 in the Research and Development appropriation and an decrease of 0.1 in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Provide Engineering Technologies and Monitoring Data for Drinking Water Standards. This program will provide evaluation of processes for removal of volatile organic compounds (VOCs), pesticides, and radionuclides for setting standards and implementing regulations. It will provide information on treatment systems performances and costs to permit cost-effectiveness analyses of proposed treatment systems. The program also focuses on evaluations of disinfectant effectiveness and factors contributing to microbial deterioration of water quality in distribution systems. Research emphasizing technologies especially adaptable to small systems are being performed.

1989 Program

In 1989, the Agency is allocating a total of \$5,137,400 supported by 56.4 total workyears for this program, of which \$3,179,900 is from the Salaries and Expenses appropriation and \$1,957,500 is from the Research and Development appropriation.

Research is evaluating treatment processes and costs to support ODW regulatory decision-making. Cost data is being compiled for unit processes to do cost-effectiveness analyses of proposed treatment systems. Factors which contribute to deterioration of water quality in distribution systems and methods for control are being investigated. Research work emphasizing technology particularly adaptable to small systems is also being performed.

1988 Accomplishments

In 1988, the Agency obligated a total of \$5,184,900 supported by 61.9 total workyears for this program, of which \$3,092,200 was from the Salaries and Expenses appropriation and \$2,092,700 was from the Research and Development appropriation.

Several of the more significant accomplishments were: a report on

treatment techniques to remove radon from small water supplies; a pilot study for control of disinfection by-products; and studies on the role of assimilable organic carbon in coliform compliance and composite coliform sampling at filtration plants.

ENVIRONMENTAL PROCESSES AND EFFECTS

1990 Program Request

The Agency requests a total of \$6,182,100 supported by 29.2 total workyears for this program, of which \$1,958,000 will be for the Salaries and Expenses appropriation and \$4,224,100 will be for the Research and Development appropriation. This represents an increase of \$373,200 in the Salaries and Expenses appropriation, and an increase of \$800,000 in the Research and Development appropriation. The total workyears are decreased by 0.1 FTE. The increase in Salaries and Expenses reflects increased personnel and support costs. The increase of the Research and Development appropriation reflects an enhancement of the wellhead protection program. The workyear reduction reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary Media.

Provide Scientific Methods and Data for Protection of Ground Water Resources. This program will focus on methods development and studies of surface transport and fate processes. Research studies will be conducted on in-situ aquifer restoration techniques which may potentially lead to a more cost-effective cleanup of aquifers. This work is coordinated with the Hazardous Waste and Pesticides Programs.

Research will provide field evaluation of movement and transformation of wastes from underground injection wells. Joint studies will be conducted with the People's Republic of China in the area of transport and fate of groundwater contaminants. The program will provide technical assistance for the Wellhead Protection Program, major technology transfer programs and support for the Underground Injection Control (UIC) Program.

1989 Program

In 1989, the Agency is allocating a total of \$5,008,900 supported by 29.3 total workyears for this program, of which \$1,584,800 is from the Salaries and Expenses appropriation and \$3,424,100 is from the Research and Development appropriation.

Research is focused on developing and improving methods for predicting the impacts of contamination on underground sources of drinking water as well as providing for information transfer for the International Groundwater Modeling Center. The program is determining the cost-effectiveness of in-situ aquifer restoration techniques and supports the Underground Injection Control (UIC) program by studying the fate and transport of wastes in and from the injection zone. The Wellhead Protection Program is providing a study of unregulated sources and how they affect wellhead protection areas.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,959,000 supported by 30.1 total workyears for this program, of which \$1,554,400 was from the Salaries and Expenses appropriation and \$3,404,600 was from the Research and Development appropriation.

Among the accomplishments were: a report on in-situ restoration of an aquifer contaminated with halogenated organic contaminants, and a report on hydrochemical characterization of a saline aquifer used for waste disposal.



Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>DRINKING WATER</u>	4-1
ABATEMENT AND CONTROL	
Drinking Water Criteria, Standards and Guidelines	4-18
Criteria, Standards and Guidelines	4-20
Drinking Water Implementation.	4-22
Drinking Water State Program Resource Assistance.	4-25
Public Water Systems Supervision Program Grants.	4-26
Underground Injection Control Program Grants	4-28
Special Studies and Demonstrations	4-30
Drinking Water Management	4-32
Public Water Systems Supervision Program Assistance.	4-34
Underground Injection Control Program.	4-36
Ground-Water Protection.	4-39



DRINKING WATER
Drinking Water Criteria, Standards & Guidelines

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Criteria, Standards &
Guidelines

Salaries & Expenses	\$7,149.5	\$4,859.0	\$4,857.4	\$5,325.6	\$468.2
Abatement Control and Compliance	\$9,256.6	\$7,188.7	\$7,188.7	\$7,138.0	-\$50.7
TOTAL	\$16,406.1	\$12,047.7	\$12,046.1	\$12,463.6	\$417.5

Drinking Water
Implementation

Salaries & Expenses		\$2,671.4	\$2,665.9	\$3,190.1	\$524.2
Abatement Control and Compliance		\$2,714.3	\$2,639.3	\$4,639.3	\$2,000.0
TOTAL		\$5,385.7	\$5,305.2	\$7,829.4	\$2,524.2

TOTAL:

Salaries & Expenses	\$7,149.5	\$7,530.4	\$7,523.3	\$8,515.7	\$992.4
Abatement Control and Compliance	\$9,256.6	\$9,903.0	\$9,828.0	\$11,777.3	\$1,949.3

Drinking Water
Criteria, Standards &
Guidelines

TOTAL	\$16,406.1	\$17,433.4	\$17,351.3	\$20,293.0	\$2,941.7
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PERMANENT WORKYEARS

Criteria, Standards &
Guidelines

	107.6	70.0	70.0	70.0	
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Drinking Water
Implementation

		42.0	41.9	45.9	4.0
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TOTAL PERMANENT WORKYEARS

	107.6	112.0	111.9	115.9	4.0
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DRINKING WATER
Drinking Water Criteria, Standards & Guidelines

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Criteria, Standards & Guidelines	116.8	70.0	70.0	70.0	
Drinking Water Implementation		42.0	41.9	45.9	4.0
TOTAL WORKYEARS	116.8	112.0	111.9	115.9	4.0

WATER

DRINKING WATER

Drinking Water Criteria, Standards and Guidelines

Budget Request

The Agency requests a total of \$20,293,000 supported by 115.9 total workyears for 1990, an increase of \$2,941,700 from 1989. Of the request, \$8,515,700 will be for the Salaries and Expenses appropriation and \$11,777,300 will be for the Abatement, Control and Compliance appropriation, an increase of \$992,400 and \$1,949,300 respectively, and 4.0 total workyears.

CRITERIA, STANDARDS AND GUIDELINES

1990 Program Request

The Agency requests a total of \$12,463,600 supported by 70.0 total workyears for this program, of which \$5,325,600 will be for the Salaries and Expenses appropriation and \$7,138,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$468,200 in the Salaries and Expenses appropriation, a decrease of \$50,700 in the Abatement, Control and Compliance appropriation, and no change in total workyears.

During 1990, EPA's first priority will be development of the remaining National Primary Drinking Water Regulations (NPDWRs) specifically listed by name in the Safe Drinking Water Act (SDWA) Amendments. These include standards for inorganic and organic chemicals, pesticides and radionuclides. Proceeding from the 1989 proposals for these rules, the program will work to finalize standards and support the legal defense of the filtration, lead and coliform NPDWRs promulgated in 1989. Meanwhile, work begins on NPDWRs for disinfection by-products and 25 or more contaminants from the 53 on the 1988 contaminant regulatory list. Determining NPDWRs for disinfectant chemicals and their reaction by-products will require a balance between the degree of protection against pathogenic microorganisms and the goal of keeping exposure to chronic health risks at a minimum. To achieve this balance the most precise and thorough chemical, toxicological and engineering data base will need to be assembled. Development of the accompanying technical criteria and guidance manuals will be of particular importance, given the intricacy of the prospective rules and their widespread applicability.

In addition, the National Survey of Pesticides in Drinking Water Wells will be completed, providing valuable information about the extent of national occurrence by a wide spectrum of pesticides in drinking water wells, both public and private.

1989 Program

In 1989 the Agency is allocating a total of \$12,046,100 supported by 70.0 total workyears for this program, of which \$4,857,400 is from the Salaries and Expenses appropriation and \$7,188,700 is from the Abatement, Control and Compliance appropriation.

The centerpiece of 1989 standard-setting activity is the promulgation of NPDWRs to address lead and microbiological contaminants. The NPDWR for lead includes Maximum Contaminant Levels (MCLs) for lead and another corrosion product, copper, to limit their entry into the distribution system and a treatment rule that addresses the distribution system itself. Treatment, in the form of corrosion control to minimize leaching from plumbing materials, is contingent upon the results of a rigorous monitoring regimen of systems' outlets for lead, copper and acidity.

The risk of infectious disease is addressed by two rules, one a treatment rule establishing requirements for surface source systems, the other a revision of the interim coliform MCL, which prescribes routine monitoring by all Public Water Systems (PWSs) for general microbiological contamination. Another critical milestone is proposal of the remaining MCL Goals and NPDWRs specified by the Amendments, including standards for radon and other radionuclides. Standards for a number of pesticides now in use are also being developed. Development of these standards is expected to be affected by the 1988 Amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), which provide for accelerated review of all registered pesticides on a very stringent schedule. In 1989, this program is coordinating with the pesticides program as it develops priority lists for these reviews.

Standards for contaminants listed in 1988 must await completion of the statutory list of 83 contaminants. The program is continuing to assemble and interpret data on actual or potential contaminant occurrence and health effects in order to assure maximum risk-reduction. One important data source is the National Survey of Pesticides in Drinking Water Wells, conducted jointly by the drinking water and pesticides programs. Another activity involves conducting selected toxicological studies for four to eight individual contaminants to ascertain acute, chronic and subchronic adverse health effects.

1988 Accomplishments

In 1988, the Agency obligated \$16,406,100 supported by 116.8 total workyears for this program, of which \$7,149,500 was from the Salaries and Expenses appropriation and \$9,256,600 was from the Abatement, Control and Compliance appropriation. In 1988, this program included both implementation and standard setting activities that were divided beginning in 1989 between Criteria, Standards and Guidelines and the new Drinking Water Implementation program.

The Agency proposed a treatment technology NPDWR for surface source PWSs and microbiological MCLs, both to combat waterborne pathogens. The Agency also published a required list of contaminants that will be candidates for regulation in 1991, including pesticides and other synthetic organic chemicals and compounds created by disinfection processes of conventional water system treatment. Accelerated development of a regulatory strategy to reduce waterborne lead resulted in a proposed lead regulation including a lead MCL and treatment technique. The NPDWR for fluoride became effective and the public notification regulation was promulgated. Sampling and information collection were conducted for the National Survey of Pesticides in Drinking Water Wells and health advisories were prepared.

The program undertook mobilization and technology transfer activities such as the National Drinking Water Hotline and disseminated public information

materials. Numerous public events, meetings, and briefings were held, including the first "National Drinking Water Week" and the release of special public service announcements on lead in drinking water. Revisions to the public notice requirements were promulgated. PWS program management and oversight increased as a result of new standards and new provisions (variances and exemptions) to enhance compliance. As technical issues developed with implementation of the Underground Injection Control (UIC) program, EPA helped to assure consistency through guidance and regulatory revisions.

Other activities included the promulgation of (1) eligibility requirements for Indian tribal authorities to be granted primary enforcement authority (primacy) for PWS and UIC regulations; (2) procedures for states to revise their PWS primacy authority for new regulatory responsibilities; and (3) revisions to UIC regulations specifying new monitoring requirements for Class I wells.

DRINKING WATER IMPLEMENTATION

1990 Program Request

The Agency requests a total of \$7,829,400 supported by 45.9 total workyears for this program, of which \$3,190,100 will be for the Salaries and Expenses appropriation and \$4,639,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$524,200 in the Salaries and Expenses appropriation, an increase of \$2,000,000 in the Abatement, Control and Compliance appropriation, and an increase of 4.0 total workyears. This increase represents additional program responsibilities as a result of the Safe Drinking Water Act (SDWA) Amendments of 1986.

The Amendments mandate a new, comprehensive level of drinking water protection for regulators and the entire regulated community of 200,000 public water systems (PWSs). EPA and state programs must acquire a new style of interaction with the regulated community that includes marketing the new requirements to get the absolute maximum voluntary compliance and a smooth transition to a new, comprehensive regulatory framework.

Additional resources will be used to provide a strong lead for mobilization and technology-transfer activities at Headquarters, to ensure the effort will extend nationwide throughout all levels (states, localities, individual systems and consumers). Not only will materials, publications, and audiovisual presentations be developed for Regional and state use, but Headquarters will also work with national organizations with grass-roots support to maximize coverage. The drinking water and wastewater treatment programs will work in concert to provide financing and technology information and assistance to hard-pressed small communities, building on outreach, demonstrations, and clearinghouse activities currently operating in each of these two programs.

While mobilization is aimed at all the institutions concerned about safe drinking water, instituting a new comprehensive level of drinking water protection will depend mainly upon reaching and working with the vast number of small community and non-transient systems. Additional resources will also be used to provide for specific assistance to small community and non-transient systems. Such assistance may include provision of "circuit riders" to assess and work out particular problems in individual systems. Circuit riders, in conjunction with an additional Regional presence, will provide assistance to

the majority of the 38,000 small community and 20,000 non-transient noncommunity systems. The other components of assistance include training, certification, and customized outreach and technology-transfer activities. To the maximum extent possible, the Agency will make use of existing communication frameworks with rural communities, such as the U.S. Department of Agriculture's Soil Conservation Service and Extension Service, to better reach small systems.

While new ties are being established to the regulated community, there will also be increased need to provide guidance, implementation aids and briefing materials to our traditional clientele, EPA Regional offices and state primacy agents, as we develop National Primary Drinking Water Regulations (NPDWRs) in 1989 and 1990. In order to minimize the burden upon the regulated community, the new regulatory framework emphasizes flexible monitoring/reporting (M/R) requirements, state agency discretion and new regulatory devices to bring state regulators into closer working relationship with systems. Among the new tools states may use to reduce systems' routine M/R burden are "vulnerability assessments" of ground-water source systems and sanitary surveys.

In 1990, Underground Injection Control (UIC) program oversight will emphasize the development and initial implementation of an effective and flexible Class V injection control strategy. Reflecting the multiplicity of injection practices (32 major types, ranging from shallow injection of industrial wastes to sewage disposal to irrigation return wells), a multifaceted regulatory strategy will be developed using diverse regulatory and control tools to match the situation. Class V controls will likewise be prescribed according to the potential risk to current and potential public water supplies and other critical ground-water resources that these injections pose. Possible controls could range in stringency from outright banning, closure, permit, and/or enforcement actions via UIC authorities, to generic rules, outreach and informational activities to promote voluntary preventive action. The "mainstream" UIC oversight and supervision program will begin to absorb and integrate enhanced regulatory controls on Class I injection, the deep-well injection of hazardous, industrial and municipal wastes, pursuant to both the Resource Conservation and Recovery Act (RCRA) and SDWA.

1989 Program

In 1989, the Agency is allocating a total of \$5,305,200 supported by 41.9 total workyears for this program, of which \$2,665,900 is from the Salaries and Expenses appropriation and \$2,639,300 is from the Abatement, Control and Compliance appropriation.

In implementing a comprehensive framework of new drinking water standards and regulations, priority attention will be targeted towards contaminants such as pathogenic microorganisms, lead and radionuclides that occur widely and pose particular health risks. New standards are being finalized or proposed for each of these in 1989.

The Agency is pursuing an aggressive mobilization strategy during the transition period from promulgation of these rules to their effective dates, in order to achieve as much voluntary compliance as possible. In assuming this task, the Agency is expanding the development and dissemination of information and technical assistance. Meanwhile, this program maintains its ongoing risk assessment and advisory role within the framework of a fully integrated Agency effort. EPA is issuing two important PWS program revisions, one governing new

state primacy authorities and the other, variances and exemptions. Also, the first application by Indian tribal authorities is now being evaluated under the 1988 regulations for Indian PWS and UIC program primacy.

The UIC program is a comparatively new regulatory framework relative to other Agency programs. Therefore, EPA and the states are both evaluating the controls that have been imposed so far. The UIC regulations recognized the need for mid-course evaluation of key control provisions, such as mechanical integrity testing and M/R requirements, based on EPA/state experience. As EPA and the states work through the permitting/review of existing Class II oil and gas industry related wells, we are reviewing regulatory requirements and revising procedures for more effective oversight of injection practices. Another area of concern is the contamination potential of hundreds of thousands of Class V injection wells. The Report to Congress on the contamination potential of these wells revealed a serious potential for contamination of both current and potential drinking water sources. EPA has embarked upon an initiative to prevent contamination through a multifaceted regulatory and outreach approach, consistent with the diversity and number of these practices.

1988 Accomplishments

No funds were obligated for this program in 1988. This is a new program element in 1989 that resulted from a division of implementation activities from standard setting activities, both of which were funded in the Criteria, Standards and Guidelines program element in 1988.



DRINKING WATER
Drinking Water State Program Resource Assistance

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Public Water Systems
Supervision Program
Grants

Abatement Control and Compliance	\$33,424.4	\$33,450.0	\$33,450.0	\$40,450.0	\$7,000.0
TOTAL	\$33,424.4	\$33,450.0	\$33,450.0	\$40,450.0	\$7,000.0

Underground Injection
Control Program Grants
Abatement Control and
Compliance

Abatement Control and Compliance	\$11,322.8	\$10,500.0	\$10,500.0	\$10,500.0	
TOTAL	\$11,322.8	\$10,500.0	\$10,500.0	\$10,500.0	

Special Studies &
Demonstrations

Abatement Control and Compliance	\$2,999.9	\$3,000.0	\$3,000.0	\$1,000.0	-\$2,000.0
TOTAL	\$2,999.9	\$3,000.0	\$3,000.0	\$1,000.0	-\$2,000.0

TOTAL:

Abatement Control and Compliance	\$47,747.1	\$46,950.0	\$46,950.0	\$51,950.0	\$5,000.0
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Drinking Water State Program Resource Assistance	TOTAL	\$47,747.1	\$46,950.0	\$46,950.0	\$51,950.0	\$5,000.0
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WATER

DRINKING WATER

Drinking Water State Program Resource Assistance

Budget Request

The Agency requests a total of \$51,950,000 for 1990, an increase of \$5,000,000 from 1989. All of the request will be for the Abatement, Control and Compliance appropriation.

PUBLIC WATER SYSTEMS SUPERVISION PROGRAM GRANTS

1990 Program Request

The Agency requests a total of \$40,450,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$7,000,000. The increase reflects additional program activities resulting from the requirements of the Safe Drinking Water Act (SDWA) Amendments of 1986. EPA will continue to use a portion of its Abatement, Control and Compliance appropriation for direct implementation activities, including travel.

The Public Water System (PWS) Supervision program will emphasize the simultaneous implementation of a comprehensive new regulatory framework by primacy authorities and the current compliance/technical assistance program which is designed to maintain and improve the level of drinking water protection. The strategy is to build upon maximum compliance with existing standards and monitoring/reporting (M/R) requirements in order to make the transition to a new, comprehensive level of protection as smooth as possible. State grants will support the essential elements of state compliance and technical assistance programs as the states oversee compliance with the existing and first new standards for volatile organic contaminants (VOCs), a particular threat to ground-water source systems. Compliance activities will include the core data-management activity and the identification of, and immediate follow-up to, violations. Primacy programs will pursue more involved compliance and enforcement activities, implementing voluntary or formal compliance schedules under a variety of administrative and legal mechanisms such as negotiated settlements, administrative orders, citations, judicial orders, and variances or exemptions. States will also conduct quarterly reporting to EPA focusing on responses to significant noncompliance (SNC) violations as well as a growing number of program-sanctioned "vulnerability assessments" of ground-water systems, the basis on which states may relax chemical M/R requirements.

Technical assistance activities will focus on prevention measures by offering support to systems against "backsliding" into noncompliance, thereby averting problems before they grow into noncompliance. Activities will include reviews of planned system modifications; periodic sanitary surveys; licensing and permitting requirements, where state programs mandate them; and operator certification and training. Finally, case-by-case responses to the contamination of water supplies and other emergency situations will continue.

Programs will continue to maintain disease surveillance activities and liaison with hazardous-substance release programs, investigating disease outbreaks and assessing the need for alternative drinking water supplies.

In 1990, additional support to state programs is intended to help states implement new requirements, specifically the upgrading of the legal and administrative authority to enforce new National Primary Drinking Water Regulations (NPDWRs) as they are promulgated. Beyond upgrading their primacy authorities, state programs will have to institute a completely revamped laboratory capability for the 83 chemical, radionuclide and microbiological parameters established under new NPDWRs.

Additional support to state programs serves two other objectives. First, the proposed increase is expected to "leverage" an even greater commitment from state authorities, in the form of higher state program budgets, innovative program funding and/or greater regulatory program productivity. The second objective is to institute mobilization and technology-transfer activities at the state level. An important element of this effort will be state-initiated institutional innovations and compliance tools (and the state program resources to implement them), such as rules to ensure that new systems are self sufficient and measures to help existing systems find the means to become self-sufficient (such as consolidation with viable systems, other cooperative assistance, and/or creative financial assistance programs).

1989 Program

In 1989, the Agency is allocating a total of \$33,450,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

The program supports 54 state primacy programs; three EPA direct implementation programs, and programs on Indian lands that together constitute the nationwide protection program. The principal task in 1989 is to transform the regulatory framework of the PWS Supervision program while minimizing an increase in system noncompliance due to increased regulatory requirements. EPA's strategy is to promote rapid state implementation of the new requirements while supporting states as they build their capacity to implement a new, comprehensive regulatory framework. Integral to this strategy is the need to involve agencies and constituencies beyond EPA in improving understanding of, and mobilizing support for, enhanced protection of drinking water. This will be accomplished through technical assistance, training, information and support to encourage institutional change. At the same time, states are vigorously pursuing ongoing violations with the full range of administrative and enforcement tools at their disposal. Consequently, states must both maintain their current high level of administrative and enforcement actions and meet the new challenges while addressing the noncompliance problems of small systems.

During 1989, new NPDWRs for VOCs become effective. All PWSs will be responsible for meeting the maximum contaminant levels (MCLs) prescribed by these new regulations, although small and very small systems have an extended period to monitor for them.

Grant funds continue to be available to Indian tribal authorities who are in the process of qualifying for PWS primary enforcement responsibility. EPA will continue to use grant funds to support its direct implementation responsibilities, including travel.

1988 Accomplishments

In 1988, the Agency obligated a total of \$33,424,400 for this program, all of which was from the Abatement, Control and Compliance appropriation.

States continued to supervise compliance with the NPDWRs, revised their legal authorities to accommodate new MCLs, expanded state laboratory certification capability, and provided assistance in monitoring for regulated and unregulated contaminants. States continued their emphasis on system compliance, using a combination of technical assistance and enforcement and took action against violations of drinking water standards. States began implementing other changes including 1) new public notification requirements; 2) authorities to issue new 1-year exemptions, attendant enforceable compliance schedules and 3-year "extensions" to compliance deadlines; and 3) bans on lead-content plumbing materials which, if not enforced, will result in up to a 5 percent withholding of the PWS state grant. In 1988, Indian tribal authorities received assistance in determining eligibility for development grants consistent with forthcoming Federal regulations.

The PWS grant funds continued to support the primacy programs of 54 states and territories and EPA direct implementation program activities including analytical services, sanitary surveys, training, disease surveillance, on-site technical activities, and data management.

UNDERGROUND INJECTION CONTROL PROGRAM GRANTS

1990 Program Request

The Agency requests a total of \$10,500,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents no change from 1989. These funds will support programs to protect underground sources of drinking water (USDW) from contamination through underground injection in all 57 states and Territories, as well as on Indian lands.

In 1990, EPA will begin implementing the Class V strategy and propose regulations designed to control high risk well categories identified by such characteristics as contamination potential to Public Water Supplies (PWSs), well construction and the nature and volume of the injection fluid. Initial regulations will focus on Class V wells, such as automobile service station wells and industrial drainage wells, which have been determined to require further control through permitting, closure, or cleanup. A one million dollar set-aside will be used to fund Class V demonstration projects and will provide critical information needed to support regulation development and best management procedures.

Permitting, which enables states (or EPA) to apply the general Underground Injection Control (UIC) requirements to site-specific conditions, will continue with new Class I wells, the repermitting of hazardous waste Class I wells, new Class II wells and selected Class V wells. EPA and state programs will, as appropriate, revise existing UIC regulations for Class II wells based on the 1988 and 1989 mid-course evaluations, which focused on plugging and abandonment procedures, mechanical integrity testing and construction requirements. EPA and the states will continue Class II compliance evaluations as the remaining states complete their first five-year cycle of Class II file reviews. In addition to the permitting responsibilities, EPA and the states will also

witness mechanical integrity tests, inspect and review plugged and abandoned wells, review well records, and track compliance with regulatory requirements and permit conditions.

When necessary, administrative orders (AOs) and/or legal actions will be initiated by state programs against owners/operators that significantly violate UIC regulatory requirements. This will include preparing public notification of violation and intent to issue AOs, and conducting public hearings.

The grant funds will also support technical assistance to operators, maintenance of inventory data, and regulatory changes to accommodate new EPA requirements and guidelines. The Agency will provide grants to Indian tribes working towards primacy, and will continue to implement the program on Indian lands and in non-primacy states. The Agency may use a portion of the grant funds for travel related to direct implementation activities.

1989 Program

In 1989, the Agency is allocating a total of \$10,500,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

These funds support 35 full and 5 partial primacy programs to protect USDW from contamination through underground injection. EPA uses grant funds allotted to 17 full non-primacy and 5 partial non-primacy states and Indian lands to support direct implementation activities. The top priority for EPA and the states continues to be permitting of new Class II wells and repermitting of hazardous waste Class I wells. Under existing regulations, EPA is increasing efforts to bring enforcement and/or regulatory action against Class V wells which endanger USDW by targeting vulnerable areas and high risk Class V wells. EPA is revising the Class V regulatory strategy and developing the Class V well demonstration initiative.

Grant funds also support surveillance and compliance activities. The programs' primary means of surveillance is through field inspections and the review of reports submitted by operators. This requires the program to maintain an effective verification effort to ensure the credibility of operators' data. The demonstration of an absence of leaks through mechanical integrity testing is also an important element of compliance. Where violations are evident, appropriate enforcement action is being initiated. States will emphasize compliance with permit conditions by increasing inspections, mechanical integrity tests (MIT) and surveillance activities.

During 1989, Indian Tribes that are eligible to assume primacy may apply for grants to establish a UIC program. This includes conducting an inventory to determine the number and types of wells to be regulated and establishing the framework for the permitting and enforcement programs.

1988 Accomplishments

In 1988, the Agency obligated a total of \$11,322,800 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Grant funds supported 33 full and 6 partial programs. EPA implemented 24 Federal programs supported in part by the grant funds. The states and EPA completed 8,596 permit determinations for new and existing wells and conducted evaluations to determine if permit requirements were being met. In addition, mechanical integrity tests were conducted to ensure the integrity of the wells.

The states and EPA also focused on compliance activities by increasing field inspections and initiating enforcement actions. As a result of a special set-aside in the grants, the states increased their activities relating to Class I and II wells.

Other activities included the review of monitoring reports, maintenance of inventory data, and the initiation of an EPA Headquarters Class V well regulatory strategy to control targeted, high-risk injection practices into USDW, particularly those threatening PWSs.

SPECIAL STUDIES AND DEMONSTRATIONS

1990 Program Request

The Agency requests a total of \$1,000,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$2,000,000 from 1989. This decrease represents the Agency's belief that the state affiliates should be able to provide additional funding through their organizational dues and training fees.

This program supports rural water training and technical assistance through the National Rural Water Association (NRWA) and its 35 independent, nonprofit State Rural Water Associations covering 36 states. "Grassroots" training and technical assistance is provided to owners and operators of rural water systems to help achieve and maintain compliance with the Safe Drinking Water Act (SDWA) Amendments. Owner/operator training which enhances the delivery of clean, safe drinking water by rural water systems addresses the operation and maintenance of small water systems and wells, monitoring and reporting, record keeping, water regulations, rates, systems management and distribution and disinfection procedures.

EPA will also provide funds to Rural Community Association Projects (RCAPs) which complement the NRWA by assisting small public water systems to improve their management capabilities, long term planning, rate structures, financial management and SDWA compliance. By conducting site visits to these systems, RCAP determines technical assistance needs and develops educational programs to improve compliance.

1989 Program

In 1989, the Agency is allocating a total of \$3,000,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

EPA is funding 35 independent, nonprofit state associations covering 36 states through agreements with the NRWA. These resources support technical assistance to rural water systems in such areas as operations, maintenance, finance and management to promote compliance with the national drinking water standards. To be eligible for a grant, state Rural Water Associations must provide direct training and technical seminars to small system owner/operators and provide certificate training in cooperation with state primacy programs.

In 1989, EPA is funding the six RCAPs to assist small public water systems in meeting the SDWA Amendments by improving the management capabilities, rate structures and financial management of these small water systems. Through site visits to rural systems, RCAP personnel determine technical assistance needs

and develop appropriate educational programs to achieve the goal of improved compliance.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,999,900 for this program, all of which was from the Abatement, Control and Compliance appropriation.

The technical assistance and training program conducted by the NRWA and its 32 affiliates included 360 informational seminars for operators and decision makers, 119 technical training sessions, 33 jointly sponsored specialized training sessions with other state and Federal agencies, and 36 problem solving sessions. The NRWA affiliates made 8,282 technical assistance visits during this period to address individual rural water system problems with compliance, operations and maintenance, finance and management. In addition, the NRWA helped the Agency to implement the Mobile Home Park (MHP) pilot project in the State of Texas by providing technical assistance and guidance to MHP owners/ operators.

In 1988, EPA supported six RCAP grants designed to improve the management capabilities and financial management of small public water systems. These funds provided management and financial training and assistance to 60 small systems covering 13 states. RCAP projects included an assistance program to help small systems apply for loans and grants, a Resource Clearinghouse project to compile all available funds within a state into a manual for small systems, and the development of training information and manuals for small water systems.

DRINKING WATER
Drinking Water Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Public Water Systems Supervision Program Assistance						
Salaries & Expenses	\$5,124.9	\$5,128.7	\$5,106.2	\$5,939.6	\$833.4	
Abatement Control and Compliance	\$10.0	\$10.0	\$10.0	\$10.0		
TOTAL	\$5,134.9	\$5,138.7	\$5,116.2	\$5,949.6	\$833.4	
Underground Injection Control Program						
Salaries & Expenses	\$5,783.2	\$5,721.8	\$5,702.1	\$6,083.9	\$381.8	
TOTAL	\$5,783.2	\$5,721.8	\$5,702.1	\$6,083.9	\$381.8	
TOTAL:						
Salaries & Expenses	\$10,908.1	\$10,850.5	\$10,808.3	\$12,023.5	\$1,215.2	
Abatement Control and Compliance	\$10.0	\$10.0	\$10.0	\$10.0		
Drinking Water Management	TOTAL	\$10,918.1	\$10,860.5	\$10,818.3	\$12,033.5	\$1,215.2
PERMANENT WORKYEARS -----						
Public Water Systems Supervision Program Assistance	111.9	114.9	114.2	135.3	21.1	

DRINKING WATER
Drinking Water Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

	(DOLLARS IN THOUSANDS)				
Underground Injection Control Program	138.8	138.2	137.8	145.2	7.4
TOTAL PERMANENT WORKYEARS	250.7	253.1	252.0	280.5	28.5
TOTAL WORKYEARS					

Public Water Systems Supervision Program Assistance	123.7	124.0	123.3	135.3	12.0
Underground Injection Control Program	154.4	145.8	145.2	145.2	
TOTAL WORKYEARS	278.1	269.8	268.5	280.5	12.0

WATER

DRINKING WATER

Drinking Water Management

Budget Request

The Agency requests a total of \$12,033,500 supported by 280.5 total workyears for 1990, an increase of \$1,215,200 and 12.0 workyears from 1989. Of the request, \$12,023,500 will be for the Salaries and Expenses appropriation and \$10,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$1,215,200 for the Salaries and Expenses appropriation and 12.0 workyears.

PUBLIC WATER SYSTEMS SUPERVISION PROGRAM ASSISTANCE

1990 Program Request

The Agency requests a total of \$5,949,600 supported by 135.3 total workyears for this program, of which \$5,939,600 will be for the Salaries and Expenses appropriation and \$10,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$833,400 for the Salaries and Expenses appropriation, no change to the Abatement, Control and Compliance appropriation, and an increase of 12.0 total workyears. The increase in Salaries and Expenses and workyears will ensure the successful delegation of new regulatory requirements to the states. EPA's biggest priority is to work with the states so that they accept primacy for the new regulations, implement the new program requirements, and enforce existing standards.

EPA will use additional resources to increase emphasis on the development of a nationwide mobilization framework as well as a delivery system for technology transfer. Regional resources will be used to establish the essential link between the national and state levels, actively encouraging the states to take on the new role of "marketing" the new requirements across the entire regulated community and of taking an active hand in systems' efforts to establish self-sufficient revenues to implement the new, mandated level of protection. The Regions will disseminate materials and develop their own customized materials, as appropriate; conduct seminars; and carry out videotaping and teleconferencing sessions with an eye towards maximum "leverage" through the use of third parties that will generate further local-level contacts.

The Regions will use additional resources to institute a program to reach and work with small community and non-transient systems, supported by extramural funding provided at Headquarters. Assistance will extend to demonstration projects with regard to analytic methods, treatment and storage, and source assessment and protection. A key component will be to improve the interaction between vendors of package plants designed for small systems and the systems themselves, since small systems are least likely to be adept with state-of-the-art technologies.

In the meantime, the Regions will also use increased resources to expand their assistance to states in two areas: 1) adoption and execution of the lead and surface water treatment rule (SWTR) authorities, and 2) response to a growing number of issues arising from case-by-case implementation of the microbiological monitoring/reporting (M/R) and volatile organic contaminant (VOC) requirements. Implementation of the two new rules, the changes in routine microbiological monitoring, and the first new standards for ground-water contaminants, the VOCs, will generate unavoidable demands for EPA involvement and technical assistance, particularly for the new procedures and responses to specific contamination incidents. Key examples are the lead and SWTR requirements, which stand to impact the very largest systems to a greater extent than the other rules. These systems, which may extend interstate, are bound to involve EPA as well as state authorities.

The Regions will supervise states' expansion of laboratory certification programs to encompass the full range of regulated and unregulated toxic chemicals, radionuclides, pesticides, and microbiological parameters. Where the Regions have direct implementation responsibility, they must take on the states' expanded duties directly. In most cases, this involves jurisdiction over Indian water supplies. The Regions must both supervise implementation of new requirements for these systems and work with Indian tribal authorities and other jurisdictions without primacy to develop supervision programs of their own. Finally, the Regions will be managing a sharp increase in compliance data reported by the states and continuing to maintain the emphasis on eliminating significant noncompliance inventories.

1989 Program

In 1989, the Agency is allocating a total of \$5,116,200 supported by 123.3 total workyears for this program, of which \$5,106,200 is from the Salaries and Expenses appropriation and \$10,000 is from the Abatement, Control and Compliance appropriation.

The preeminent task in 1989 is to transform the state regulatory framework of the Public Water System (PWS) Supervision program, while minimizing any increase in system noncompliance caused by regulatory requirements. EPA's strategy is to promote timely state implementation of the succession of new requirements and to support states as they build their capacity to implement the new requirements. New activities range from disseminating the new requirements for protecting drinking water supplies, to making consumers and the regulated community more aware of the health risks and the need to increase monitoring, operator training and treatment efforts.

To get the best possible start on assuring compliance with the numerous new and revised standards that will become effective, EPA and the states must ensure maximum compliance with existing requirements. To this end, Regions are negotiating with primacy states to obtain annual compliance targets and working with the states to maintain vigilant monitoring of systems' compliance and prompt, thorough response to violations. In non-primacy jurisdictions the Regions are tracking systems' compliance status, notifying them of violations and laying the groundwork for any necessary enforcement actions.

During 1989, new National Primary Drinking Water Regulations (NPDWRs) for VOCs require all PWSs to be responsible for meeting the Maximum Contaminant Levels (MCLs) if and when unsafe levels are found. In addition, the Regions are to supervise state adoption of critical new regulatory requirements promulgated during 1989 which consist of a Microbiological MCL, a NPDWR for

lead and corrosion control, and a NPDWR specifying treatment technology and performance for surface source PWSs. These requirements are of particular importance by virtue of the widespread occurrence of lead contamination in drinking water and the particular vulnerability of surface source systems to pathogenic microorganisms such as Giardia and viruses.

Pursuant to the new authorities making Indian tribes eligible to assume primacy for PWS Supervision responsibilities, the Regions are assisting tribal authorities to develop primacy prerequisites and make the necessary applications. The Regions then review and resolve such applications with Headquarters.

1988 Accomplishments

In 1988, the Agency obligated a total of \$5,134,900 supported by 123.7 total workyears for this program, of which \$5,124,900 was from the Salaries and Expenses appropriation and \$10,000 was from the Abatement, Control and Compliance appropriation.

During 1988, the Regions supervised state adoption of several additional statutory requirements designed to extend public health protection by addressing specific chemical contaminants. The fluoride rule became effective and implementation of the VOC NPDWRs continued as additional categories of community and non-transient systems undertook monitoring according to the staggered schedule within the rule. Regions worked with primacy states to incorporate regulatory and monitoring requirements needed to enforce these and other forthcoming standards and helped states with new analytical techniques to meet additional laboratory certification requirements.

In promoting further gains in compliance with existing regulatory requirements, the Regions continued to support states in emphasizing elimination of all violations of the NPDWRs, using the full range of available tools and escalating actions as needed. Pursuant to the Agency's guidance, the Regions negotiated quarterly compliance targets with the states for the reduction of "significant noncompliance" with microbiological, turbidity and chemical MCL requirements. The program continued to track state compliance monitoring to find and help with problem systems and respond to contamination of supplies and waterborne disease outbreaks. Ongoing assistance in response to contamination incidents and all other oversight, evaluation and management tasks continued.

UNDERGROUND INJECTION CONTROL PROGRAM

1990 Program Request

The Agency requests a total of \$6,083,900 supported by 145.2 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$381,800 and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs.

In 1990, EPA will continue to implement programs in 21 non-primacy States (17 full and 4 partial) and on Indian lands which do not have primacy. Direct implementation activities will include continuing to make permit determinations as well as ensuring adherence to permit conditions and other regulatory requirements. A key objective will be to ensure more effective compliance and

enforcement through greater emphasis on field inspections and surveillance. The Agency expects to complete its five-year schedule for permitting Class II wells and continue general program management of contracts and grants for program implementation activities, data management, and permit tracking.

EPA will be responsible for oversight of 36 full and 4 partial primacy programs, with South Dakota expected to receive delegation under SDWA Section 1422. EPA will provide technical assistance to primacy states, evaluate state efforts in implementing their programs, and ensure that the programs continue to meet the minimum regulatory requirements. The Agency will continue to review state permits to ensure that the permit conditions are properly enforced. Other oversight activities will include reviewing state noncompliance reports, compiling annual report data, preparing state-specific guidance documents and administering the Underground Injection Control (UIC) state grant program.

Regions will assist states in implementing an effective and flexible Class V well control strategy designed to match the potential risk these injection practices pose to current and potential public water supplies and other critical ground-water resources. Possible controls could range in stringency from outright banning, closure, permit, and/or enforcement actions via UIC authorities. Regions will advise states to initially address high-risk Class V wells (e.g., automobile service station wells and industrial drainage wells), defined according to their intrinsic threat to underground sources of drinking water (USDW). Using updated Class V inventory data, the Regions will continue to search for Class IV wells and initiate immediate closure. As the high risk wells are addressed, the Agency will develop mechanisms to handle the residual risk associated with the other categories of Class V wells.

Regions will review applications from Indian tribes and determine whether they meet requirements for treatment as a state and also determine their eligibility for primacy. For those Indian tribes applying for primacy, the Agency will review applications and provide guidance and grant assistance. The Regions will continue to implement requirements for Class I injection wells as required under the Safe Drinking Water Act (SDWA) and subsequent regulatory controls on deep-well injection of hazardous, industrial and municipal waste in direct implementation states, and monitor the requirements addressed by primacy states.

1989 Program

In 1989, the Agency is allocating a total of \$5,702,100 supported by 145.2 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

The Agency continues to implement Federal programs in 22 non-primacy states (17 full and 5 partial) and on Indian lands. Regions are negotiating state grant workplans and agreements to ensure that states carry out quantifiable Class V activities, such as inspections and permitting. This work is designed to support the Agency in developing a regulatory strategy designed to protect underground sources of drinking water from high-risk Class V wells identified by such factors as proximity to PWSs, well construction, and the nature and volume of the injection fluid.

EPA is providing oversight and technical assistance to 35 full and 5 partial primacy programs. Mississippi is expected to receive delegation under SDWA Section 1425 and Nevada under SDWA Sections 1422 and 1425. EPA evaluates

state efforts to implement their programs, to ensure that minimum regulatory requirements are met. The Agency reviews state permits to ensure that they are issued in accordance with approved state programs and that permit conditions are properly enforced.

Following the mid-course evaluations, Regions are developing state-specific compliance evaluation programs for each state and Federal program as it completes the first five-year cycle of Class II file reviews. Regions continue to emphasize permit determinations and are responsible for ensuring compliance with the permit requirements by conducting on-site inspections and witnessing and reviewing mechanical integrity tests. Other activities include the development of site-specific guidance, maintaining inventory data, and preparing annual reports.

Regions are implementing ambient monitoring requirements for Class I injection wells, as required under the SDWA Amendments of 1986, in direct implementation states. This work also includes the review of requirements addressed in primacy states. The Regions are providing assistance to Indian tribes who are working toward assuming primacy.

1988 Accomplishments

In 1988, the Agency obligated a total of \$5,783,200 supported by 154.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

The Agency implemented Federal programs in 24 states and on Indian lands. Direct implementation activities focused on making permit determinations as well as ensuring adherence to permit conditions and other regulatory requirements.

Regional activities in primacy states included general oversight and technical assistance through the issuance of guidance documents or on-site assistance. Through quarterly reporting data, the Regions reviewed the states' progress and took the necessary actions to ensure proper enforcement.

During 1988, the EPA began conducting mid-course evaluations of key control provisions based on Region/state experience with regulating existing Class II oil and gas wells. Regions reviewed and revised Class V well inventories and assisted the states in identifying and taking enforcement action against subcategories of high risk, Class V and/or Class IV wells. Regions also provided assistance to Indian tribes working towards assuming primacy as authorized by the SDWA Amendments.



DRINKING WATER
Ground-Water Protection

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Ground-Water Protection					
Salaries & Expenses	\$3,475.8	\$3,821.9	\$3,827.7	\$4,442.0	\$614.3
Abatement Control and Compliance	\$2,886.4	\$4,000.0	\$3,890.8	\$3,390.8	-\$500.0
TOTAL	\$6,362.2	\$7,821.9	\$7,718.5	\$7,832.8	\$114.3
TOTAL:					
Salaries & Expenses	\$3,475.8	\$3,821.9	\$3,827.7	\$4,442.0	\$614.3
Abatement Control and Compliance	\$2,886.4	\$4,000.0	\$3,890.8	\$3,390.8	-\$500.0
TOTAL	\$6,362.2	\$7,821.9	\$7,718.5	\$7,832.8	\$114.3
Ground-Water Protection					
PERMANENT WORKYEARS -----					
Ground-Water Protection	68.4	79.1	79.0	90.8	11.8
TOTAL PERMANENT WORKYEARS	68.4	79.1	79.0	90.8	11.8
TOTAL WORKYEARS -----					
Ground-Water Protection	76.2	80.9	80.8	90.8	10.0
TOTAL WORKYEARS	76.2	80.9	80.8	90.8	10.0



WATER

DRINKING WATER

Ground-Water Protection

Budget Request

The Agency requests a total of \$7,832,800 supported by 90.8 total workyears for 1990, an increase of \$114,300 and 10.0 total workyears over 1989. Of the request, \$4,442,000 will be for the Salaries and Expenses appropriation and \$3,390,800 will be for the Abatement, Control and Compliance appropriation, an increase of \$614,300 and a decrease of \$500,000 respectively.

GROUND-WATER PROTECTION

1990 Program Request

The Agency requests a total of \$7,832,800 supported by 90.8 total workyears for this program, of which \$4,442,000 will be for the Salaries and Expenses appropriation and \$3,390,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$614,300 and a decrease of \$500,000, respectively, and an increase of 10.0 total workyears. The increase in Salaries and Expenses and workyears reflects the need for additional personnel to assist states in the development and implementation of comprehensive ground-water protection programs. The decrease in Abatement, Control and Compliance reflects the expected completion of a Congressionally mandated study on point and nonpoint source pollution in the Spokane-Rathdrum Valley Aquifer.

For 1990, EPA will issue guidance to the states on the refinement and implementation of their ground-water protection strategies. Additional resources will support the Agency's efforts to assist states in developing and carrying out approaches that address the full range of actual/potential sources of contamination to their ground-water resources. Working with the Agency's pesticides program, the ground-water protection program will issue guidance to assist state water agencies in developing hydrologic aspects of pesticides management plans which provide for protection methods tailored to area-specific differences in ground-water use, value and vulnerability -- a key feature of the Agency's Agricultural Chemicals in Ground-Water Strategy. The Agency will further assist states in the development of pesticides management plans by conducting workshops and seminars on the appropriate options for preventing pesticide contamination of ground-water.

In 1990, EPA will promote wellhead protection efforts by encouraging states to incorporate wellhead protection programs into their ground-water protection strategies. The use of wellhead protection as a central feature of EPA ground-water protection activities will promote consistency in policy among EPA programs and provide a more focused approach at state and local levels. The Agency will continue to assist states in the delineation of wellhead protection areas (WHPAs) and to enhance State capacity to both address specific sources of contamination and develop appropriate risk management strategies.

The Agency will continue its efforts to ensure that relevant data collected by or on behalf of EPA is compatible, comparable and readily accessible to state, local and Federal managers. Specific activities will include the development of methods for translating new and historical ground-water data into an automated form and the continuation of enhancements to STORET and other EPA data bases. EPA will expand the field of ground-water data collection to provide for both the establishment of standard identification of key facilities and the digitalization of selected baseline data, particularly for public water wells. The Agency will enhance and promote the use of geographic information systems, particularly in identifying the most critical sources of contamination in WHPAs, and will provide workshops and seminars for state and local officials on the use of these data management tools for ground-water protection.

EPA will also continue to both review and make Sole Source Aquifer (SSA) designations according to the formal process established in 1987 and review projects supported by Federal funds on or near a designated SSA.

1989 Program

In 1989, the Agency is allocating a total of \$7,718,500 supported by 80.8 total workyears for this program, of which \$3,827,700 is from the Salaries and Expenses appropriation and \$3,890,800 is from the Abatement, Control and Compliance appropriation.

During 1989, the Agency continues to support, through technical and financial assistance, states' activities in developing and adopting ground-water protection strategies. The Agency is completing an assessment to summarize and evaluate the ground-water protection efforts being carried out by the states and the extent of progress being made nationally to achieve ground-water protection through state efforts. The findings are being presented at an EPA/state forum which will address the states' current capacity to undertake protection programs, particularly in the states' pesticide management plans, which are required by EPA's proposed Agricultural Chemicals in Ground-Water Strategy.

The Agency is continuing to assist states in the development of wellhead protection (WHP) programs, to mitigate the effects of actual and potential sources of contamination on ground waters which flow into public water systems. Assistance to states continues to include technical guidance on the delineation of WHPAs and on identifying and inventorying contamination sources, as well as providing technical information on methods for protecting the land area around public water wells from a wide variety of sources of contamination. In particular, EPA has developed a simple personal computer model for delineating WHPAs which can easily be used by local managers. EPA is conducting training for selected state and local officials on the delineation methodology, the use of the computer models, and various protection approaches. In addition, the Agency is reviewing and approving WHP programs submitted by the states in accordance with the June 1989 statutory requirements. The Agency expects at least 17 states to submit their programs for review by that date.

EPA will continue working to incorporate the ground-water evaluation (classification) guidelines into relevant EPA programs for use in decision making and to assist states in the development and application of their own classification systems.

In 1989, the Agency is taking major steps to make ground-water data collected by EPA programs more assessable and usable by states and localities, as well as other Federal programs, by requiring that all programs collect a minimum set of data elements when monitoring ground water. EPA is also making the STORET system more user-friendly by providing access through personal computers. Efforts are being made to help small community managers make use of existing data sources for their ground-water management purposes.

EPA manages the SSA program by responding to petitions for SSA designation and by reviewing projects financially assisted by the Federal government which may contaminate the designated aquifer.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,362,200 supported by 76.2 total workyears for this program, of which \$3,475,800 was from the Salaries and Expenses appropriation and \$2,886,400 was from the Abatement, Control and Compliance appropriation.

During 1988, EPA provided technical and financial assistance to the states for the development and implementation of state strategies and action plans for overall ground-water protection efforts. The Agency sponsored a comprehensive assessment of the status of the states' ground-water protection strategies to ascertain how far the states have progressed in their strategies, what problems/issues they have encountered, and the extent to which comprehensive programs are in place or underway.

Also in 1988, EPA's ground-water protection program was actively involved with other Agency programs in the development and review of state nonpoint source assessments and management plans, as well as the provision of technical support to the hazardous waste and cleanup decision processes on hydrogeologic issues.

The Agency promoted the application of a differential protection approach to protecting ground-water resources in order to give priority to those resources which serve as drinking water supplies. Further, the Agency provided states and localities with state-of-the-art knowledge and technical approaches to the protection of wellhead areas contiguous to public water wells. The Agency developed and published technical assistance documents on such WHP issues as contingency planning for alternative sources of water supplies, assessing and managing risks in WHPAs, identifying and controlling for sources of contaminants in WHPAs, and identifying local sources of funding for ground-water protection. In addition, the Agency sponsored training sessions for Regional, state and local officials on the various models which may be used to delineate WHPAs.

In 1988, the Agency developed a minimum set of data elements for all Agency programs which collect ground-water data. These common data standards will greatly increase the utility by all programs of data collected for other purposes, greatly expanding the availability of usable data.

The Agency designated additional SSAs in 1988. The number of designated aquifers increased to a total of 48 nationwide by the end of the year. Because of this increase, EPA also reviewed a greater number of Federal financially-assisted projects within SSA boundaries as required by the Safe Drinking Water Act.

Finally, as directed by Congress, and in conjunction with appropriate state and local agencies, EPA initiated a study to identify point and nonpoint sources of contamination and appropriate control measures for the Spokane-Rathdrum Valley Aquifer in the Northwest.

Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>DRINKING WATER</u>	4-1
ENFORCEMENT	
Drinking Water Enforcement.	4-44



DRINKING WATER
Drinking Water Enforcement

		ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)						
PROGRAM						

Drinking Water Enforcement						
Salaries & Expenses		\$3,157.9	\$3,458.5	\$3,434.9	\$3,596.4	\$161.5
	TOTAL	\$3,157.9	\$3,458.5	\$3,434.9	\$3,596.4	\$161.5
TOTAL:						
Salaries & Expenses		\$3,157.9	\$3,458.5	\$3,434.9	\$3,596.4	\$161.5
Drinking Water Enforcement	TOTAL	\$3,157.9	\$3,458.5	\$3,434.9	\$3,596.4	\$161.5
PERMANENT WORKYEARS						

Drinking Water Enforcement		75.1	83.8	83.7	90.0	6.3
TOTAL PERMANENT WORKYEARS		75.1	83.8	83.7	90.0	6.3
TOTAL WORKYEARS						

Drinking Water Enforcement		80.4	90.5	90.0	90.0	
TOTAL WORKYEARS		80.4	90.5	90.0	90.0	



WATER

DRINKING WATER

Drinking Water Enforcement

Budget Request

The Agency requests a total of \$3,596,400 supported by 90.0 total workyears for 1990, an increase of \$161,500 from 1989. All of the request will be for the Salaries and Expenses appropriation.

DRINKING WATER ENFORCEMENT

1990 Program Request

The Agency requests a total of \$3,596,400 supported by 90.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$161,500 and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs.

Compliance priorities for the Public Water Systems (PWSs) will continue to focus on the reduction of all existing violations of the National Primary Drinking Water Regulations (NPDWRs). The first priority will be the elimination of all significant non-compliers (SNCs) of these regulations. Enforcement will be targeted mainly at the existing SNC universe; however, all violations are at risk of enforcement action. The second priority will involve developing an effective risk-based enforcement scheme to ensure that the newly completed NPDWRs required under SDWA for chemical, radionuclide, and microbiological contaminants and the treatment technology rule for surface source systems are properly enforced. The lead and surface water treatment rules are particularly complex with respect to enforcement, involving negotiated compliance agreements and specific compliance schedules. With the lead and coliform rules potentially affecting every PWS, the potential for noncompliance greatly increases.

Headquarters will provide guidance and assistance to the Regions in enforcing the additional program requirements and targeting enforcement actions to eliminate the contaminant problems, especially where high-risk contaminant violations occur. A key element in the transition to an expanded regulatory framework is the continued reduction of existing noncompliance under interim maximum contaminant levels (MCLs) to the greatest possible extent, using notices of violation and administrative enforcement orders (AOs) against noncomplying systems. Regions will also provide assistance to a state primary enforcement authority in issuing an AO or taking other appropriate enforcement action.

Enforcement activities against high-risk Class V wells that threaten underground sources of drinking water will be melded into a comprehensive but flexible Class V control program. Class I wells (waste disposal injections) will require attention in 1990 because of the continuing need to issue and reissue permits based on the new monitoring regulation. Failure to apply for a

permit, test for well mechanical integrity, or provide monitoring reports will result in Regional enforcement actions. In addition, the program will continue to oversee the progress of civil enforcement cases including review of Regional enforcement referral documents and case files, and monitoring the progress of cases at the Department of Justice (DOJ) to ensure resolution after referral. The program will provide support for cases prepared by Regional Counsels and coordinate with other offices to present accurate and verifiable compliance information when necessary. Regions will ensure that states take appropriate action to bring SNCs into compliance, in order to avoid Regional enforcement actions against violators.

1989 Program

In 1989, the Agency is allocating a total of \$3,434,900 supported by 90.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

To get the best possible start on assuring compliance with the multitude of new and revised standards coming into effect, EPA must assure maximum compliance with the existing requirements. Regions continue to issue AOs against violators of PWS and Underground Injection Control (UIC) program requirements in order to achieve compliance with regulations and standards set by the Agency. While SNCs are the first enforcement priority, all violations are at risk of enforcement action. The Regional offices are concentrating on reducing the rate of noncompliance by drawing on their past experience to initiate enforcement actions quickly and appropriately and utilizing their resources in the most efficient way possible. In the event state action has failed to remedy a violation, EPA may issue administrative orders or initiate court action.

EPA is building upon the microbiological/turbidity violations identified as SNC by adding those systems which have failed to monitor or have contamination levels that are an unreasonable risk to health for inorganic, radionuclide and pesticide chemicals. Violations of new standards (e.g., volatile organic contaminants) are being incorporated according to the general framework of the SNC definition and pursued as appropriate.

EPA is implementing the new AO compliance tracking system, which was designed to provide managers with information on the status of AOs and the actions taken to return violators to compliance. The Regions are involved in assisting Regional Counsels with documentation concerning violations which require new and more stringent enforcement actions and participating in activities related to civil enforcement referral to the DOJ.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,157,900 supported by 80.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

For the 12 months ending March 31, 1988, less than two percent of community water systems were in SNC with microbiological or turbidity MCLs and/or monitoring and reporting (M/R) requirements and/or total trihalomethane M/R requirements. Approximately twenty-five percent of community water systems reported some violations; three-fourths of these involved failure to properly monitor and report results only, and nearly half of these M/R violations were first-time failures, corrected in the next monthly compliance interval. The

remaining seventy-five percent of community water systems were in full compliance.

1988 marked the second year of the timely and appropriate determinations for states. The provisions of this initiative set out a time frame and several enforcement actions which states should use to promote compliance among the water systems within their jurisdictions. Appropriate actions for SNCs are defined in four categories: 1) state issuance of an Administrative Order, 2) referral to State Attorney General, 3) filing of a criminal case, or 4) establishing a bilateral agreement between the state and the violator which includes a compliance schedule. Through the third quarter of 1988, 54.3 percent of the SNCs identified had been resolved in a timely and appropriate manner.

1988 was the first full year for the issuance of Federal AOs for UIC violations. The Regions issued 68 proposed and 93 final UIC AOs for a total of 161 actions. This is an increase of nearly 68 percent from the 109 issued in 1987. The greatest improvement came in the number of final AOs issued. Final UIC AOs increased by more than 500 percent over 1987. During 1988, the PWS program issued 161 enforcement actions against violators.



5. Hazardous Waste

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	5-1
RESEARCH AND DEVELOPMENT	
Hazardous Waste Research.	5-7
Scientific Assessment.	5-12
Monitoring Systems and Quality Assurance	5-13
Health Effects	5-15
Environmental Engineering and Technology	5-15
Environmental Processes and Effects.	5-17
Integrated Hazardous Waste Research.	5-18
ABATEMENT AND CONTROL	
Waste Management Regulations, Guidelines and Policies	5-20
Regulations, Guidelines and Policies - Hazardous Waste	5-22
Regulations, Guidelines and Policies - Air and Radiation	5-24
Regulations, Guidelines and Policies - Water	5-25
Regulations, Guidelines & Policies - Underground Storage Tanks	5-27
Financial Assistance.	5-30
Hazardous Waste Management Financial Assistance to States.	5-31
Underground Storage Tanks State Grants	5-33
Waste Management Strategies Implementation.	5-34
Hazardous Waste Management Regulatory Strategies Implementation.	5-35
Emergency Planning/Community Right-to-know - Title III.	5-37
ENFORCEMENT	
Hazardous Waste Enforcement	5-41



HAZARDOUS WASTE

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$71,048.0	\$74,305.7	\$73,984.6	\$78,659.3	\$4,674.7
Abatement Control and Compliance	\$155,584.6	\$161,193.8	\$159,692.7	\$166,698.4	\$7,005.7
Research & Development	\$29,801.2	\$31,559.9	\$31,095.5	\$28,345.6	-\$2,749.9
Scientific Activities	\$5.1				
Overseas					
TOTAL, Hazardous Waste	\$256,438.9	\$267,059.4	\$264,772.8	\$273,703.3	\$8,930.5

PERMANENT WORKYEARS	1,368.4	1,441.7	1,427.7	1,489.0	61.3
TOTAL WORKYEARS	1,460.9	1,505.0	1,491.0	1,489.0	-2.0
OUTLAYS	\$258,469.6	\$250,186.5	\$248,053.2	\$270,319.6	\$22,266.4
AUTHORIZATION LEVELS	The Hazardous and Solid Waste Amendments of 1984 reauthorized this program at a level of \$249,529,000 for 1988. The Solid Waste Disposal Act as amended expired on November 8, 1988. Reauthorization is pending.				

NOTE: 1988 Actual does not include \$250.3 discussed in Community Right To Know. It is included in the Superfund media total for 1988.



HAZARDOUS WASTE

OVERVIEW AND STRATEGY

The Resource Conservation and Recovery Act (RCRA), as revised by the Hazardous and Solid Waste Amendments (HSWA) of 1984, provides the legislative mandate for a nationwide program to manage hazardous wastes from generation through disposal.

A significant portion of the waste universe is not yet adequately characterized or regulated, and many facilities still must comply with regulatory standards. In addition, environmental contamination at many facilities, including closed facilities, must be addressed through corrective action requirements and permitting authorities. Due to HSWA, small quantity generators and underground storage tank (UST) owners and operators have become regulated. Finally, the identification and reporting of hazardous chemicals in communities, regulated by Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), requires state and local governments to develop plans to protect the public in the event of a chemical accident.

To address these problems, the Agency has developed a strategy that encompasses nine major objectives. These are to: (1) increase state program capability; (2) increase the state role in the compliance monitoring and enforcement program; (3) increase corrective action efforts by supporting states in their corrective action endeavors; (4) maintain a strong permitting program; (5) develop new and significantly improve existing regulations; (6) address solid waste issues; (7) develop and implement a regulatory program for underground storage tanks; (8) enhance the development and implementation of the Title III program; and (9) conduct research and development to support the regulatory programs.

Increase State Program Capability

Effective management of hazardous wastes is dependent on a strong Federal/state partnership. The Agency will assist the states in upgrading their program capabilities to meet new and modified Federal standards. The Agency will continue to support the states by providing direct program assistance, training, guidance, and financial support. The Agency and the states will continue to operate within the National Criteria, which defines the key factors and performance expectations for managing and evaluating the RCRA program.

States will continue to develop legislation and regulations to incorporate HSWA provisions into their programs. The Agency and the states will jointly examine existing state authorities to determine what changes are needed. Fifty states are expected to be authorized for the RCRA base program by the end of 1990, and a substantial number of these will have received authorization to implement various portions of HSWA.

Increased attention will be given to implementing the RCRA Information System to enable the Regions and states to monitor facility progress as well as national trends. This improved data collection system will provide the basis for evaluation of the effectiveness of waste management regulations and development of regulatory improvements.

Increase State Role in Compliance Monitoring and Enforcement Program

With the proven capability of the states to perform inspections and follow-up enforcement, the Agency will shift responsibility for Federal and local facility inspections and enforcement to the states. With this shift, the states will have assumed the lead in all mandated inspection and enforcement efforts. Land disposal facilities, treatment and storage facilities, and a significant percentage of large quantity generators and transporters will be state-inspected. Violations detected and designated high priority, especially land disposal restrictions violations, will be addressed by the states through formal enforcement actions. EPA will perform oversight inspections and inspections in non-participating and reverted states; undertake targeted inspections and enforcement; and support the states in implementation of the compliance monitoring and enforcement responsibilities through technical assistance and training.

Support States in Corrective Action

The national program will assess RCRA facilities in terms of environmental significance. RCRA Facility Investigations will continue to be required. As corrective measures studies are completed, remedies will be selected and required through either the permitting or enforcement process. EPA will continue its corrective action efforts, especially at environmentally significant facilities. The states will be encouraged through HSWA authorization and cooperative agreements to assume the lead for corrective action oversight whenever possible. Training programs on corrective measures and workshops for enforcement officers and permit writers will be conducted.

Maintain a Strong Permitting Program

Implementation activities expand from meeting statutory deadlines to modifying permits completed under HSWA mandates, making post-closure permit determinations, and processing permit appeals. As new regulations are promulgated, it becomes necessary to revise permits to reflect these changes. Amendments and additions to existing regulations -- including the Organic Toxicity Characteristic, Corrective Action, Burner and Blender requirements, and Alternative Closure rules -- will increase both the complexity of permits and the size of the regulated universe. Modifications will also be necessary as facilities increase capacity or manage waste streams not accounted for in the original permit. The Agency will continue to provide technical assistance to permit writers in order to facilitate the increasingly complex permitting process. A number of permits are likely to be appealed, particularly at land disposal and incineration facilities. Processing of these appeals will continue in 1989 and 1990. The Regions and states will complete the processing of most closure plans for interim status land disposal facilities by the end of 1990. Processing Subpart X permits for miscellaneous units and permit actions at Federal facilities will also be major activities.

Develop New and Revise Existing Regulations

The Hazardous Waste regulatory program focuses on implementing major HSWA regulations completed in previous years, completing promulgation of remaining HSWA requirements, and enhancing the waste management program through regulatory amendments. The Agency will emphasize the further definition of the hazardous waste universe. The Agency will promote hazardous waste minimization practices through development of industry-specific brochures and guidance manuals. Regulations under development will be reviewed to ensure incorporation of waste reduction concepts. The hazardous waste minimization

program will be developed in conjunction with an Agency-wide strategy for ensuring multimedia implementation of waste minimization practices. Implementation issues will continue to be a high priority, with guidances planned for corrective measures, incineration and mixed waste management.

Address Solid Waste Issues

The Agency will continue efforts to address emerging solid waste management (Subtitle D) issues. The Agency will promulgate revised criteria and develop guidance for municipal solid waste landfills. The Agency will assist the states, which have responsibility for implementing solid waste management programs, by serving as a technical clearinghouse for solid waste management information, options, and guidelines. The Agency will also continue work on municipal waste combustion ash, including promulgating guidelines on ash management and providing technical assistance to state and local governments. Other major enhancements to the RCRA program include the development of regulations for the management of mining wastes and oil and gas production wastes. These standards will be tailored under Subtitle D to account for their special characteristics. The Agency will also continue to address emerging medical waste issues through the development of regulations and guidance.

Develop and Implement the UST Program

Since a number of states already had underground storage tank regulatory programs prior to the inception of the national legislation, the Federal task has been to define and develop a comprehensive regulatory approach to prevent leaks in underground storage tanks. The ongoing task will be to develop and improve state programs, since many are not as comprehensive as the Federal regulations. With the recent promulgation of the final Federal technical, leak detection, and corrective action regulations for both petroleum and hazardous substance tanks, and financial responsibility regulations for petroleum tanks, states are engaged in developing legislative authorities and regulations no less stringent than the Federal standards. Most states are expected to submit an application for Federal program approval. The years 1989 and 1990 will be transition years as states expand their programs to encompass the Federal program, as well as manage their existing state programs.

The Agency will assist the states in development of their authorities and regulations and in the program application process. Assisting the states in developing the capacity to administer the entire Federal program will be an equally important task. In addition, the Agency will provide states with practical tools and guidances, in areas such as tank inspections and closures, to facilitate enforcement of the technical standards and leak detection requirements. EPA will also provide technical information to support state outreach activities to enhance voluntary compliance by tank owners and operators.

The last of the major Federal regulations required by Subtitle I will be completed in 1990 with the promulgation of the financial responsibility standards for tanks containing hazardous substances. Regulatory efforts will then shift to consideration of deferred tanks, including bulk storage tanks and individual sumps and reservoirs.

Develop and Implement the Emergency Planning/Community Right-To-Know Program

The Emergency Planning and Community Right-to-Know Act was passed by Congress as Title III of the SARA. Title III establishes a framework for states and localities to identify hazardous chemicals present in their

communities and to develop plans to protect the public in the event of an emergency. The Agency will continue to support state efforts to develop programs that meet Title III objectives. Also, the Agency will provide technical assistance to states and local communities in the management and proper use of the information generated through SARA's reporting requirements, and in the implementation of a Title III enforcement program.

Conduct Research and Development to Support Regulatory Program

The Research and Development program will continue to develop scientific and technical information to support hazardous waste regulatory development and implementation. While research to support land disposal banning decisions is nearing completion, resources will be shifted to augment the research component of the Agency's new pollution prevention/waste minimization program and to enhance research to support the characterization of non-hazardous wastes from municipal, industrial, and mining facilities and monitoring of RCRA Subtitle D facilities.

In 1990, a program to evaluate and demonstrate innovative technologies for municipal waste treatment will begin. The Municipal Innovative Technology Evaluation program is designed to stimulate development and adoption of innovative techniques relating to recycling, recovery, waste treatment, including combustion, and waste minimization. It will also contain a technology transfer component aimed at municipal waste decision-makers and the private sector consulting services that support them. Research related to exposure and risk of dioxin has been completed.

Consulting Services

Consulting services are required for several aspects of the Title III program, since the Agency primarily performs a support role under this program. The Agency will use advisory and assistance services of consultants for the development of regulatory impact analyses, technical support in developing regulations and guidance documents, technical assistance required for program implementation and for the development of information management systems.

HAZARDOUS WASTE

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase + Decrease - 1990 vs. 1989
PROGRAM ACTIVITIES				
Regulations:				
RCRA Standards.....	25	59	48	-11
Effl. Stds. Decision Doc	*	*	3	+3
Effl. Stds. Data Summary	*	*	2	+2
Proposals.....	14	34	16	-18
Promulgations.....	11	25	27	+2
UIC Petition Reviews....	0	40	35	-5
Implementation:				
Guidance Documents.....	24	38	28	-10
Reports to Congress.....	5	4	3	-1
State Auth. (cumul.)....				
Base Program.....	44	50	50	0
HSWA Cluster I.....	1	6	33	+27
Final Permit				
Determinations/Closures	760	446	430	-13
(cumulative).....	1,913	2,359	2,788	+430
UIC Permit Revisions....	0	75	75	0
Enforcement and				
Corrective Actions:				
Inspections.....	13,704	12,400	12,901	+501
Administrative Orders...	1,145	1,425	1,361	-64
Civil Litigation.....	133	156	156	0
Criminal Litigation.....	102	103	104	+1
Corrective Action				
Facility Assessments....	399	141	76	-65
Monitoring of Corrective				
Action Activities.....	156	260	341	+81
POTW Corrective Measures	6	6	6	0

* Outputs for the Office of Water's Hazardous Waste Regulatory Development Activities are not available for 1988 and 1989.



Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	5-1
RESEARCH AND DEVELOPMENT	
Hazardous Waste Research.	5-7
Scientific Assessment.	5-12
Monitoring Systems and Quality Assurance	5-13
Health Effects	5-15
Environmental Engineering and Technology	5-15
Environmental Processes and Effects.	5-17
Integrated Hazardous Waste Research.	5-18



HAZARDOUS WASTE
Hazardous Waste Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
PROGRAM						

Scientific Assessment - Hazardous Waste						
Salaries & Expenses	\$1,074.3	\$1,432.8	\$1,283.5	\$1,086.4	-\$197.1	
Research & Development	\$2,460.7	\$2,443.9	\$2,192.6	\$1,685.8	-\$506.8	
TOTAL	\$3,535.0	\$3,876.7	\$3,476.1	\$2,772.2	-\$703.9	
Monitoring Systems & Quality Assurance - Hazardous Waste						
Salaries & Expenses	\$3,895.5	\$4,019.7	\$3,949.0	\$3,353.6	-\$595.4	
Research & Development	\$8,924.8	\$9,229.8	\$9,129.8	\$9,121.4	-\$8.4	
TOTAL	\$12,820.3	\$13,249.5	\$13,078.8	\$12,475.0	-\$603.8	
Health Effects - Hazardous Waste						
Salaries & Expenses	\$689.1	\$653.8	\$648.0	\$678.0	\$30.0	
Research & Development	\$950.0	\$950.2	\$950.2	\$850.2	-\$100.0	
TOTAL	\$1,639.1	\$1,604.0	\$1,598.2	\$1,528.2	-\$70.0	
Environmental Engineering & Technology - Hazardous Waste						
Salaries & Expenses	\$5,153.7	\$5,270.6	\$5,114.4	\$5,398.8	\$284.4	
Research & Development	\$10,177.8	\$11,952.4	\$11,839.3	\$12,454.6	\$615.3	
TOTAL	\$15,331.5	\$17,223.0	\$16,953.7	\$17,853.4	\$899.7	
Environmental Processes & Effects - Hazardous Waste						
Salaries & Expenses	\$3,190.8	\$3,242.5	\$3,324.9	\$3,419.4	\$94.5	
Research & Development	\$4,487.9	\$4,483.6	\$4,483.6	\$4,233.6	-\$250.0	
TOTAL	\$7,678.7	\$7,726.1	\$7,808.5	\$7,653.0	-\$155.5	
Integrated Hazardous Waste Research						
Research & Development	\$2,800.0	\$2,500.0	\$2,500.0		-\$2,500.0	
TOTAL	\$2,800.0	\$2,500.0	\$2,500.0		-\$2,500.0	
TOTAL:						
Salaries & Expenses	\$14,003.4	\$14,619.4	\$14,319.8	\$13,936.2	-\$383.6	
Research & Development	\$29,801.2	\$31,559.9	\$31,095.5	\$28,345.6	-\$2,749.9	
Hazardous Waste Research	TOTAL	\$43,804.6	\$46,179.3	\$45,415.3	\$42,281.8	-\$3,133.5

HAZARDOUS WASTE
Hazardous Waste Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

PERMANENT WORKYEARS					

Scientific Assessment - Hazardous Waste	15.8	20.9	18.3	17.4	-.9
Monitoring Systems & Quality Assurance - Hazardous Waste	46.6	47.6	47.6	47.5	-.1
Health Effects - Hazardous Waste	12.3	12.0	12.0	12.0	
Environmental Engineering & Technology - Hazardous Waste	86.6	94.0	91.1	89.8	-1.3
Environmental Processes & Effects - Hazardous Waste	50.1	54.3	53.9	52.0	-1.9
TOTAL PERMANENT WORKYEARS	211.4	228.8	222.9	218.7	-4.2
TOTAL WORKYEARS					

Scientific Assessment - Hazardous Waste	19.0	20.9	18.3	17.4	-.9
Monitoring Systems & Quality Assurance - Hazardous Waste	52.4	47.6	47.6	47.5	-.1
Health Effects - Hazardous Waste	12.3	12.0	12.0	12.0	
Environmental Engineering & Technology - Hazardous Waste	93.8	94.0	91.1	89.8	-1.3
Environmental Processes & Effects - Hazardous Waste	52.0	54.3	53.9	52.0	-1.9
TOTAL WORKYEARS	229.5	228.8	222.9	218.7	-4.2

HAZARDOUS WASTE

Hazardous Waste Research

Principal Outputs by Objective

Objective 1: Develop Data to Support the Use of Alternate Technologies

- 1990: o Technical Report on Emerging Chemical and Biological Treatment Methods for Halogenated Chemical Waste Streams (Engineering)
- o Technical Report on the Evaluation of Waste Minimization Technologies at Two Industrial Sites (Engineering)
- 1989: o Technical Resource Document on the Minimization and Control of Hazardous Waste Combustion By-Products (Engineering)
- o Report to Congress on Pollution Prevention Research (Engineering)
- 1988: o Technical Report on the Evaluation of Innovative Technology for the Treatment of Hazardous Waste Streams (Engineering)

Objective 2: Develop and Evaluate Tests and Procedures for Conducting Risk Assessments

- 1990: o Report on Field Evaluation of Unsaturated Zone Model (Envir. Processes)
- o Report on Evaluation of Using Plants to Decontaminate and Metabolize PCB's (Envir. Processes)
- o Report on Response to Toxicants of Plants Used as Cover Crops at Hazardous Waste Sites (Envir. Processes)
- 1989: o Health and Environmental Effects Documents (Sci. Assessment)
- o Field Validation of Solute Transport Model for Prediction of Waste Concentrations in Ground Water (Envir. Processes)
- 1988: o Health and Environmental Effects Documents (Sci. Assessments)
- o Risk Assessment Field Guide for RCRA (Sci. Assessment)
- o User Manual for Metals-Speciation Model (MINTEQ) (Env. Processes)

Objective 3: Conduct Assessment and Control Research Necessary to Control Dioxin

- 1989: o Report on Plant Uptake of Dioxin (Envir. Processes)
- o Photodegradation Evaluation of Dioxin in Soils (Envir. Processes)
- 1988: o Final Report on Pharmacokinetics and Immunotoxicity of 2,3,7,8-TCDD in Rhesus Monkeys (Sci. Assessment)
- o Report on Ingestion of Soil by Children (Sci. Assessment)

Objective 4: Develop Procedures to Identify and Measure Chemicals in Wastes

- 1990: o Report on Research Statistics, Geostatistics, and Chemometrics (Monitoring)
- 1989: o Development of Automated Expert Systems for Determining Location Standards for Subtitle-D Facilities in Wet Environments (Monitor.)
- 1988: o Guidance Document for Determining Monitoring Methods for Subtitle D Sites in or Near Wet Environments (Monitoring)

Objective 5: Develop the Data to Support Implementation of the Land Disposal Regulations

- 1990: o Complete Guidance Documents on the Design and Operation of Landfills and Surface Impoundments (Engineering)
- 1988: o Development of an Expert System for Evaluating RCRA Closure Plans (Engineering)

Objective 6: Develop Data to Support Implementation of the Incineration Regulation

- 1990: o Technical Report on the Control Technology Assessment for Residues from Municipal Waste Combustion Systems (Engineering)
- 1989: o Issue Best Practices Manual for Hazardous Waste Destruction in High Temperature Industrial Processes (Engineering)
- 1988: o Assessment Report on Vermont Model Incinerator/Resource Recovery Facility (Sci. Assessment)

Objective 7: Provide Quality Assurance Support to the Hazardous Waste Program

- 1990: o Annual Report on Quality Control Samples for RCRA Appendix VIII Chemicals (Monitoring)
- 1989: o Annual Report on Quality Control Samples for RCRA Appendix VIII Chemicals (Monitoring)
- 1988: o Annual Report on Quality Control Samples for RCRA Appendix VIII Chemicals (Monitoring)

Objective 8: Develop Procedures to Prevent and Contain Hazardous Releases

- 1990: o Technical Report on New and Improved Internal Tank Inspection Equipment and Procedures (Engineering)
- 1989: o Technical Report on the Evaluation of Automatic Product Monitoring Devices for Underground Storage Tanks (Engineering)

HAZARDOUS WASTE

Hazardous Waste Research

Budget Request

The Agency requests a total of \$42,281,800 supported by 218.7 total workyears for 1990, a decrease of \$3,133,500 and a decrease of 4.2 total workyears from 1989. Of the request, \$13,936,200 will be for the Salaries and Expenses appropriation and \$28,345,600 will be for the Research and Development appropriation, decreases of \$383,600 and \$2,749,900 respectively.

Program Objectives

The Resource Conservation and Recovery Act (RCRA) authorizes a regulatory program to identify and manage wastes which pose a substantial hazard to human health or the environment. RCRA also requires the promulgation of standards related to Underground Storage Tank systems for both chemicals and petroleum products. Section 311 of the Clean Water Act also mandates some of the research conducted under this program, specifically the hazardous material release efforts.

Objective 1: Develop Data to Support the Use of Alternative Technologies. Research supporting this objective is being used to implement provisions of RCRA that require the banning of highly hazardous wastes from land disposal. The effectiveness of treatment alternatives and waste altering processes is being evaluated and performance parameters established.

Objective 2: Develop and Evaluate Tests and Procedures for Conducting Risk Assessments. Research supporting this objective will provide more applicable, less expensive, simpler, and more accurate risk assessment methodologies, as well as actual risk assessments for decision making.

Objective 3: Conduct Assessment and Control Research Necessary to Address Dioxin. Research supporting this objective will evaluate the potential for human health effects from dioxin in the environment.

Objective 4: Develop Procedures to Characterize Chemicals in Wastes. Research develops and validates the analytical procedures and techniques required to characterize wastes for Sections 3001 and 3013 of RCRA. These are used for listing and other regulatory decisions made by the Office of Solid Waste.

Objective 5: Develop Data to Support the Land Disposal Regulations. This research program provides support for permitting of land disposal and land treatment facilities, and for improvements in operation and design requirements.

Objective 6: Develop Data to Support the Incineration Regulations. Laboratory, pilot and full-scale incineration units are being investigated to determine the performance of a range of thermal treatment devices. Results are used by permitting officials to evaluate permit requests and to monitor for compliance with performance requirements. Evaluation of municipal waste combustion processes also occurs under this objective. Health risk from incinerator emissions and residues are investigated.

Objective 7: Provide Quality Assurance Support A quality assurance program is being conducted to provide a scientific data base of known quality to support RCRA regulatory activities. The program includes a repository of calibration standards, reference materials, and on-site evaluations of contractor laboratories.

Objective 8: Develop Procedures to Prevent and Contain Hazardous Releases. Research supporting this objective addresses requirements established by Section 311 of the Clean Water Act (CWA) and RCRA's Underground Storage Tank (UST) program. Research supporting these programs assesses the most cost-effective technology and scientific techniques available to prevent and control releases of hazardous substances.

Objective 10: Conduct Research Support for Emergency Planning and Community Right-to-Know. Research will support the implementation of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) on Community Planning and Emergency Right-to-Know. Efforts will focus on development of process measurement and monitoring techniques for prevention of accidental and chronic releases in an effort to help state and local governments, planning authorities, industry and private citizens assess and respond to risks posed by hazardous substance releases.

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$2,772,200 supported by 17.4 total workyears for this program, of which \$1,086,400 will be for the Salaries and Expenses appropriation and \$1,685,800 will be for the Research and Development appropriation. This represents decreases of \$197,100 and \$506,800 respectively, and a decrease of 0.9 total workyears. These decreases reflect the completion of the dioxin research program.

Develop and Evaluate Tests and Procedures for Conducting Risk Assessments. Health and Environmental Effects Documents, Reference Doses, and technical evaluations will continue to be provided to support the RCRA listing, permitting and land disposal restriction programs. Microcomputer-assisted risk assessment tools will be further developed.

Develop Data to Support the Incineration Regulations. A comprehensive risk assessment methodology for evaluating health risks from municipal waste incineration will be implemented. This methodology will include methods for assessing the risks resulting from the use of municipal waste incineration as well as assessing the risks remaining after the waste has been burned.

1989 Program

In 1989, the Agency is allocating a total of \$3,476,100 supported by 18.3 total workyears for this program, of which \$1,283,500 is from the Salaries and Expenses appropriation and \$2,192,600 is from the Research and Development appropriation. In 1989, the program is emphasizing production of health and environmental effects documents for the listing/delisting programs, and Reference Doses for the land disposal restriction program. Work is continuing on the determination of patterns of soil ingestion by children for use in exposure assessments, and a comprehensive risk assessment methodology to be used in evaluating risks from municipal incineration is being developed to permit assessment of potential risks from this disposal practice. The program will continue its assessment of the model municipal waste combustor which was initiated during 1987.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,535,000 supported by 19.0 total workyears for this program, of which \$1,074,300 was from the Salaries and Expenses appropriation and \$2,460,700 was from the Research and Development appropriation. The 1988 program emphasized preparation of health and environmental effects documents, Reference Doses, and carcinogenicity profiles. Six petitions/exposure information reports were reviewed and assistance on health/exposure assessment was provided to workgroups and the permit assistance team.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$12,475,000 supported by 47.5 total workyears for this program, of which \$3,353,600 will be for the Salaries and Expenses appropriation and \$9,121,400 will be for the Research and Development appropriation. This represents decreases of \$595,400 and \$8,400 respectively, and a decrease of 0.1 total workyears. The reduction in Salaries and Expenses reflects a reallocation of some non-personnel related resources to areas of higher priority. The workyear reduction reflects a consolidation of resources for the Regional Scientists Program within the Interdisciplinary media.

Develop Procedures to Characterize Chemicals in Wastes. Research will be conducted to develop methods for characterizing and detecting wastes and providing criteria for determining if those wastes constitute a potential hazard. Methods will be tested for application to highly toxic wastes in soils and sediments and for detection of organics in the ambient air of waste disposal facilities. A validation of the methods contained in the Compendium of Analytical Methods to Monitor for Solid Waste (SW-846) will be conducted. These methods are used to determine the composition of wastes, detect trace levels of toxic constituents, and rapidly screen for hazardous constituents. Automated methods for subsurface monitoring will be developed and evaluated for their ability to detect and track waste plume migration toward and into ground water. An expert system will be developed for use in evaluating Subtitle-D facility locations. Remote sensing will be provided to assist permit writers.

Provide Quality Assurance Support To ensure that the data on which regulations and enforcement actions are based are accurate, quality control samples and reference materials of wastes will continue to be provided to EPA contractors, state, and local laboratories to standardize monitoring methods and for calibration of RCRA analytical techniques.

Develop Procedures to Prevent and Contain Hazardous Releases. Remote sensing support will be provided to the Regions for monitoring spills and spill threats under emergency conditions in support of Section 311 of the Clean Water Act. In addition, leak monitoring methods outside underground storage tanks will be evaluated in support of leak prevention and corrective action. This activity will include evaluation of leak monitoring methods to establish which existing instrumentation meets established performance criteria.

Support Emergency Planning and Community Right-To-Know. This new program of research will focus on developing and evaluating process measurement and monitoring methods that maximize the reliability of data without requiring costly monitoring.

1989 Program

In 1989, the Agency is allocating a total of \$13,078,800 supported by 47.6 total workyears for this program, of which \$3,949,000 is from the Salaries and Expenses appropriation and \$9,129,800 is from the Research and Development appropriation. Resources in 1989 are supporting RCRA requirements to determine waste composition, to detect levels of toxic constituents in ground water/air, and to characterize hazardous constituents through the evaluation, validation, and development of new methods for SW-846. Monitoring methods are being evaluated and/or developed for use at subtitle-D landfills in wet environments. Remote sensing is also being provided to assist in the assessment and mitigation of spills from facilities engaged in production, storage, processing, and distribution of hazardous materials. Performance criteria for evaluating leak monitoring methods are being established and available techniques for conducting external leak monitoring from underground storage tanks are being evaluated and developed.

1988 Accomplishments

In 1988, the Agency obligated a total of \$12,820,300 supported by 52.4 total workyears for this program, of which \$3,895,500 was from the Salaries and Expenses appropriation and \$8,924,800 was from the Research and Development appropriation. During 1988, monitoring methods to detect hazardous constituents in ground water, air, and soils were evaluated, validated, and developed. Development of generic methods for analysis of Appendix VIII compounds continued. Advanced analytical methods for waste detection were under development. Biological procedures were evaluated as possible analytical screening techniques. Over 40,000 quality control check samples and more than 25,000 organic calibration standards were distributed to RCRA laboratories. All contractor laboratories were evaluated.

HEALTH EFFECTS

1990 Program Request

The Agency requests a total of \$1,528,200 supported by 12.0 total workyears for this program, of which \$678,000 will be for the Salaries and Expenses appropriation and \$850,200 will be for the Research and Development appropriation. This represents an increase of \$30,000 in the Salaries and Expenses appropriation and a decrease of \$100,000 in the Research and Development appropriation, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Research and Development reflects a minor reduction in research on health risk related to incineration.

Develop Data to Support the Incineration Regulations. Research will continue to provide methods and health effects data on municipal and hazardous waste combustion emissions and residual complex mixtures to assist in the assessment of potential human health risks. Pollutants from combustion control technologies will be assessed using biological potency methods to evaluate the potential hazards associated with waste incineration.

1989 Program

In 1989, the Agency is allocating a total of \$1,598,200 supported by 12.0 total workyears for this program, of which \$648,000 is from the Salaries and Expenses appropriation and \$950,200 is from the Research and Development appropriation. In 1989, this research program is assessing the potential for health effects from air emissions and residues from incinerators using various bioassay procedures. Health endpoints considered include genotoxicity, pulmonary toxicity, and other major target organ effects.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,639,100 supported by 12.3 total workyears for this program, of which \$689,100 was from the Salaries and Expenses appropriation and \$950,000 was from the Research and Development appropriation. A screening protocol for waste toxicity was completed and an incineration health effects program was initiated with mutagenicity testing of 15 samples from 6 hazardous waste incinerators.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$17,853,400 supported by 89.8 total workyears for this program, of which \$5,398,800 will be for the Salaries and Expenses appropriation and \$12,454,600 will be for the Research and Development appropriation. This represents increases of \$284,400 and \$615,300 respectively, and a decrease of 1.3 total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The increase in Research and Development will be used to implement a new Municipal Waste Innovative Technology Evaluation program and for implementation of SARA Title III. The workyear decrease reflects a minor reduction in BDAT support.

Develop Data to Support the Use of Alternative Technologies. Research efforts will evaluate both existing and emerging alternative treatment processes for wastes likely to be restricted from land disposal. The emerging technology program will place emphasis on finding alternative disposal methods for problem wastes which cannot be disposed of in landfills. A major focus of the research program is now devoted to reducing the production of pollutants at their source. New research will be conducted to define assessment techniques to measure the reduction in quantities of pollutants produced and to identify potential areas for pollution reduction. A new Municipal Waste Innovative Technology Evaluation (MITE) program will be initiated. This program is designed to: 1) provide data on innovative equipment and techniques for managing municipal waste; 2) accelerate early commercialization of innovative equipment; 3) provide support and credibility to new techniques and equipment being developed at the bench and pilot-scale; and 4) develop promising techniques directly where a definite need exists. The initial emphasis will be on demonstration of new or modified equipment processes or techniques at full or nearly full scale.

Develop Data to Support the Land Disposal Regulations. Major issues associated with disposal of hazardous waste to the land will continue to be addressed. Synthetic and clay liners will be studied and the effectiveness of alternative closure and monitoring procedures for surface impoundments will be investigated. Research will also be conducted to characterize air emissions from hazardous waste treatment, storage, and disposal facilities (TSDFs) and to assess methods to control them. Technical Resource Documents will be updated for use by Regional and state agencies for permitting hazardous waste facilities and for enforcing applicable regulations.

Develop Data to Support the Incineration Regulations. Incineration research will focus on four areas: characterizing performance of existing thermal technologies; developing methods for compliance monitoring of these facilities; characterizing products of incomplete combustion and their formation conditions; and developing methods to predict performance to avoid process failure and control process reliability. Information will be developed for both industrial processes and incinerators to support regulation of toxic metal emissions, emission of products of incomplete combustion, and for the refinement of the destruction removal efficiency rule. Research relative to municipal solid waste incinerators will be conducted, with the emphasis shifting from field characterization to evaluation of various air pollution control devices and the assessment of ash utilization and disposal techniques.

Develop Procedures to Prevent and Contain Hazardous Releases. Underground storage tank (UST) research will evaluate prevention, detection, and corrective action technologies to identify cost-effective, reliable techniques and equipment for USTs. This research will result in publications on prevention practices, assessment of retrofit techniques for leaking underground storage tanks, identification and evaluation of reliable leak detection methods for underground chemical tanks, and improvement of emergency response and remedial corrective action technologies.

Support Emergency Planning and Community Right-To-Know. This new program of research will focus on evaluating process measurement techniques applicable to accidental and chronic releases.

1989 Program

In 1989, the Agency is allocating a total of \$16,953,700 supported by 91.1 total workyears for this program, of which \$5,114,400 is from the Salaries and Expenses appropriation and \$11,839,300 is from the Research and Development appropriation. Activities in 1989 include the evaluation of emerging alternative technologies and initiation of a waste minimization/pollution prevention program. A report to the Congress will be submitted summarizing the multimedia research which should be undertaken to prevent pollution from industrial sources. Emerging technologies for detecting leaks from petroleum and chemical tank systems are being evaluated. Major land disposal issues are being investigated and various thermal destruction systems techniques are being investigated.

1988 Accomplishments

In 1988, the Agency obligated a total of \$15,331,500 supported by 93.8 total workyears for this program, of which \$5,153,700 was from the Salaries and Expenses appropriation and \$10,177,800 was from the Research and Development appropriation. The 1988 program produced performance evaluations of chemical and biological treatment methods for halogenated aromatic chemical waste streams as well as evaluations of innovative technologies for other waste streams. An expert system for evaluating RCRA closure plans was developed and work continued on development of leak detection technologies for underground storage tanks.

ENVIRONMENTAL PROCESSES AND EFFECTS

1990 Program Request

The Agency requests a total of \$7,653,000 supported by 52.0 total workyears for this program, of which \$3,419,400 will be for the Salaries and Expenses appropriation and \$4,233,600 will be for the Research and Development appropriation. This represents an increase of \$94,500 and a decrease of \$250,000 respectively, with a decrease of 1.9 total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Research and Development reflects the completion of several projects in the area of transport and fate research.

Develop and Evaluate Procedures for Conducting Risk Assessments. Research will continue on multimedia site assessment models in support of hazardous waste listing and delisting activities, methods for risk characterization of complex wastes, and methods and data for predicting subsurface contamination. An increased emphasis will be placed on ecological assessments. Transport models for predicting waste concentrations in saturated and unsaturated zones in the subsurface will be field evaluated, and a model describing speciation of metals will be developed. Bioavailability, uptake, and metabolism of hazardous chemicals by plants and animals will be investigated.

Develop Procedures to Prevent and Contain Hazardous Releases. Research and field tests of biological, physical, and chemical methods, previously tried at hazardous waste sites, will be conducted to determine their cost and applicability to cleanup of pollutants from underground storage tanks.

1989 Program

In 1989, the Agency is allocating a total of \$7,808,500 supported by 53.9 total workyears for this program, of which \$3,324,900 is from the Salaries and Expenses appropriation and \$4,483,600 is from the Research and Development appropriation. In 1989, research will support the RCRA listing, delisting, risk assessment, siting, and land disposal restriction programs. Development of multimedia assessment methods and evaluation of waste management and treatment needs, based on potential human health and environmental impacts, are being prepared. Laboratory experiments are being conducted to determine plant uptake of hazardous chemicals. The multimedia bioassessment screening protocol used in evaluating damage caused by spills and potential risk associated with waste sites is being revised based on the results of field evaluations. In addition, studies on subsurface characteristics influencing heavy metal contamination of ground water, evaluations of immiscible flow processes controlling contaminant transport in ground water, and validation of existing saturated and unsaturated zone contaminant transport models are being conducted.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,678,700 supported by 52.0 total workyears for this program, of which \$3,190,800 was from the Salaries and Expenses appropriation and \$4,487,900 was from the Research and Development appropriation. During 1988 the program completed the final version of a methodology to allow the pollution potential of any hydrogeologic setting to be evaluated. In addition, a seminar was prepared on transport and fate of contaminants in the subsurface, a user's manual was prepared on the quantitative geochemical model (MINTEQ) for predicting the equilibrium behavior of metal species in a variety of environments, and studies were reported on which indicated that in-situ bioremediation has potential for remediation of aquifers contaminated by leaking underground storage tanks.

INTEGRATED HAZARDOUS WASTE RESEARCH

1990 Program Request

The Agency requests no resources for this activity in 1990. Having funded the Center for Environmental Management at Tufts University since 1983, the Agency feels this Center is now fully established and should seek continued funding on a competitive basis. Other sources of funding are available from the private sector as well as other governmental sources.

1989 Program

In 1989, the Agency is allocating a total of \$2,500,000 supported by no workyears for this program, all of which is from the Research and Development appropriation. The program is addressing a wide variety of research and public policy issues. Issues being addressed include alternative technologies, public perceptions associated with disposal facilities, development of programs for public education, health effects, risk communication, waste minimization, and alternatives to whole animal testing.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,800,000 for this program from the Research and Development appropriation. These resources were used to continue funding research projects on health effects, monitoring systems, alternative technologies, and risk communication.



Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	5-1
ABATEMENT AND CONTROL	
Waste Management Regulations, Guidelines and Policies	5-20
Regulations, Guidelines and Policies - Hazardous Waste	5-22
Regulations, Guidelines and Policies - Air and Radiation	5-24
Regulations, Guidelines and Policies - Water	5-25
Regulations, Guidelines & Policies - Underground Storage Tanks .	5-27
Financial Assistance.	5-30
Hazardous Waste Management Financial Assistance to States.	5-31
Underground Storage Tanks State Grants	5-33
Waste Management Strategies Implementation.	5-34
Hazardous Waste Management Regulatory Strategies Implementation.	5-35
Emergency Planning/Community Right-to-know - Title III.	5-37



HAZARDOUS WASTE
Waste Management Regulations, Guidelines & Policies

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
PROGRAM						

Regulations, Guidelines & Policies - Hazardous Waste						
Salaries & Expenses	\$15,843.2	\$15,940.5	\$16,190.0	\$17,811.1	\$1,621.1	
Abatement Control and Compliance	\$36,940.0	\$41,386.0	\$40,329.5	\$40,329.5		
TOTAL	\$52,783.2	\$57,326.5	\$56,519.5	\$58,140.6	\$1,621.1	
Regulations, Guidelines & Policies - Office of Air and Radiation						
Salaries & Expenses	\$555.0	\$627.6	\$652.6	\$673.4	\$20.8	
Abatement Control and Compliance	\$3,215.0	\$3,265.0	\$3,106.8	\$3,106.8		
TOTAL	\$3,770.0	\$3,892.6	\$3,759.4	\$3,780.2	\$20.8	
Regulations, Guidelines & Policies - Office of Water						
Salaries & Expenses	\$2,112.1	\$2,274.8	\$2,436.6	\$2,054.1	-\$382.5	
Abatement Control and Compliance	\$4,559.7	\$5,025.0	\$4,974.4	\$4,974.4		
TOTAL	\$6,671.8	\$7,299.8	\$7,411.0	\$7,028.5	-\$382.5	
Regulations, Guidelines and Policies - Under- ground Storage Tanks						
Salaries & Expenses	\$2,587.2	\$3,437.1	\$3,402.6	\$3,739.0	\$336.4	
Abatement Control and Compliance	\$3,955.0	\$4,200.0	\$4,165.4	\$4,165.8	\$4	
TOTAL	\$6,542.2	\$7,637.1	\$7,568.0	\$7,904.8	\$336.8	
TOTAL:						
Salaries & Expenses	\$21,097.5	\$22,280.0	\$22,681.8	\$24,277.6	\$1,595.8	
Abatement Control and Compliance	\$48,669.7	\$53,876.0	\$52,576.1	\$52,576.5	\$4	
Waste Management Regulations, Guidelines & Policies	TOTAL	\$69,767.2	\$76,156.0	\$75,257.9	\$76,854.1	\$1,596.2

HAZARDOUS WASTE
Waste Management Regulations, Guidelines & Policies

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PERMANENT WORKYEARS

Regulations, Guidelines & Policies - Hazardous Waste	235.2	239.1	239.4	239.1	-.3
Regulations, Guidelines & Policies - Office of Air and Radiation	10.4	13.0	13.0	13.0	
Regulations, Guidelines & Policies - Office of Water	46.3	59.5	59.3	48.7	-10.6
Regulations, Guidelines and Policies - Under- ground Storage Tanks	52.0	64.1	63.4	68.2	4.8
TOTAL PERMANENT WORKYEARS	343.9	375.7	375.1	369.0	-6.1

TOTAL WORKYEARS

Regulations, Guidelines & Policies - Hazardous Waste	240.4	239.1	239.4	239.1	-.3
Regulations, Guidelines & Policies - Office of Air and Radiation	10.4	13.0	13.0	13.0	
Regulations, Guidelines & Policies - Office of Water	49.2	60.9	60.7	48.7	-12.0
Regulations, Guidelines and Policies - Under- ground Storage Tanks	56.5	67.6	66.9	68.2	1.3
TOTAL WORKYEARS	356.5	380.6	380.0	369.0	-11.0

HAZARDOUS WASTE

Waste Management Regulations, Guidelines, and Policies

Budget Request

The Agency requests a total of \$76,854,100 supported by 369 total workyears for 1990, an increase of \$1,596,200 and a decrease of 11 total workyears from 1989. Of the request, \$24,277,600 will be for the Salaries and Expenses appropriation and \$52,576,500 will be for the Abatement, Control, and Compliance appropriation, increases of \$1,595,800 and \$400, respectively. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in total workyears reflects completed water regulatory activities.

REGULATIONS, GUIDELINES, AND POLICIES -- HAZARDOUS WASTE

1990 Program Request

The Agency requests a total of \$58,140,600 supported by 239.1 total workyears for this program, of which \$17,811,100 will be for the Salaries and Expenses appropriation and \$40,329,500 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$1,621,100 for the Salaries and Expenses appropriation, no change in the Abatement, Control, and Compliance appropriation, and a decrease of 0.3 total workyears from 1989 levels. The increase in Salaries and Expenses reflects increased personnel and support costs.

The Agency will continue the development and promulgation of the remaining major regulations required by the Hazardous and Solid Waste Amendments (HSWA). Regulations that require corrective action at solid waste management units will be finalized in 1990. The Agency will promulgate the treatment standards for the final group of hazardous wastes in the land disposal restrictions schedule. The Agency will also begin setting treatment standards for wastes listed as hazardous since the 1984 Amendments, and soil and debris wastes from RCRA corrective actions and Superfund remedial actions. Completing evaluation of remaining HSWA-required listings such as Dyes and Pigments, Used Oil, and Coke, will largely fulfill the Agency's HSWA mandates. In addition, the Agency will continue to develop and disseminate technical guidance to permit writers on the new regulations, including guidance on land disposal restrictions, hazardous and solid waste incineration, and corrective measures.

The Agency will continue to expand efforts to address nonhazardous waste issues of national significance by serving as a technical clearinghouse for nonhazardous waste management information, options, and guidelines. Following final revision of the Subtitle D (nonhazardous waste) Criteria in 1989, the Agency will assist states in developing solid waste management plans. The Agency will continue to address growing national concern for the safe disposal of municipal waste combustion ash by developing guidelines for ash disposal. In addition, the Agency will develop regulations on medical wastes.

Improving states' capabilities to perform hazardous waste management activities will remain a high Agency priority. The Agency will streamline state authorization and withdrawal procedures requirements, and will process HSWA authorization packages to ensure that states adopt Federal provisions as early as possible.

The Agency will continue to revise hazardous waste regulations based on evaluation of the effectiveness of HSWA and pre-HSWA regulations. The Agency may further revise the organic toxicity characteristic to more fully encompass the hazardous waste universe and to reflect changes to maximum contaminant levels. The Agency will continue to review rulemaking petitions, including delisting petitions, submitted by the public and the regulated community in order to more effectively characterize the hazardous waste universe and ease any unnecessary regulatory burdens.

1989 Program

In 1989, the Agency is allocating a total of \$56,519,500 supported by 239.4 total workyears for this program, of which \$16,190,000 is from the Salaries and Expenses appropriation and \$40,329,500 is from the Abatement, Control, and Compliance appropriation.

The Agency is continuing to develop and revise hazardous waste regulations to respond to HSWA requirements. The Agency will propose major revisions to the location standards for hazardous waste facilities, as well as technical requirements for performing corrective action at facilities where hazardous constituents have contaminated the environment. The Agency will promulgate a rule providing delay of closure of certain hazardous waste facilities that are capable of receiving nonhazardous wastes. EPA will also promulgate regulations allowing alternative closure activities based on certain site-specific waste and location factors, as well as regulations that establish permitting requirements for mobile treatment units and experimental facilities.

The Agency is continuing to develop a comprehensive nationwide program for the safe management of municipal solid waste. The Agency will issue the Municipal Solid Waste Strategy, which will outline options and preferred practices to help states and municipalities develop integrated solid waste management programs. EPA will also continue work on final Subtitle D criteria revisions mandated by HSWA.

EPA is continuing to refine the definition of the hazardous waste universe to include wastes that pose a hazard and to exclude benign wastes. The Agency is finalizing a regulation incorporating a new test for determining wastes' toxicity, the Toxicity Characteristic Leaching Procedure. This regulation will also add approximately forty hazardous constituents to the Toxicity Characteristic. The Agency is also finalizing regulations to list primary treatment sludge from certain petroleum refining processes, as well as proposing the listing of wastes from wood preserving and surface protection industries. The Agency is continuing its review and promulgation of decisions on delisting petitions and other rulemaking petitions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$52,783,200 supported by 240.4 total workyears for this program, of which \$15,843,200 was from the Salaries and Expenses appropriation and \$36,940,000 was from the Abatement, Control, and Compliance appropriation.

In 1988, EPA promulgated regulations banning the land disposal of untreated hazardous waste included in the First Third of the scheduled wastes. The Agency enhanced permitting regulations by finalizing requirements for permitting miscellaneous hazardous waste facilities, and by finalizing the permit modification rule. EPA also provided relief to many facilities having difficulties obtaining certification of financial responsibility by finalizing regulations offering new mechanisms for proving liability coverage. The Agency continued work on the incinerator amendments and waste-as-fuel regulations, and issued several guidance documents on permitting incinerators and conducting effective trial burns. The Agency also finalized regulations modifying the statistical procedures to be used when monitoring for ground-water contamination.

The Agency continued development of a strong nonhazardous waste program by issuing the draft Municipal Solid Waste Strategy: An Agenda for Action. EPA also proposed the HSWA-mandated Subtitle D Criteria revisions. Also in the area of nonhazardous wastes, EPA published final Federal procurement guidelines for re-refined oil and paper, and proposed guidelines for the procurement of tires and insulation. The Agency issued reports to Congress on large-volume wastes from utilities and the production of oil and gas.

REGULATIONS, GUIDELINES, AND POLICIES -- OFFICE OF AIR AND RADIATION

1990 Program Request

The Agency requests a total of \$3,780,200 supported by 13.0 total workyears for this program, of which \$673,400 will be for the Salaries and Expenses appropriation and \$3,106,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$20,800 for the Salaries and Expenses appropriation, no change in the Abatement, Control and Compliance appropriation, and no change in total workyears from 1989.

In 1990 the program will continue the development of regulations for organic emissions from the seven types of treatment, storage, and disposal facilities (TSDF) area sources. These types of sources include: surface impoundments, landfills, wastewater treatment tanks, waste piles, land treatment facilities, pretreatment facilities, and transfer operations. Some sources will require additional regulations to control emissions of specific toxic constituents that will not be covered by the 1991 rule. This program will also provide technical support for states and EPA Regional offices in implementing the TSDF regulations.

1989 Program

In 1989 the Agency is allocating a total of \$3,759,400 supported by 13.0 total workyears to this program, of which \$652,600 is from the Salaries and Expenses appropriation and \$3,106,800 is from the Abatement, Control and Compliance appropriation.

In 1989 efforts are continuing on the development of regulations for the seven types of TSDF area source types listed above. Proposal of regulations is currently scheduled for late 1990. An accelerated rule covering a subset of TSDF area source types including fugitive emissions and waste solvents is scheduled to be promulgated in 1989.

1988 Accomplishments

In 1988 the Agency obligated a total of \$3,770,000 supported by 10.4 total workyears, of which \$555,000 was from the Salaries and Expenses appropriation and \$3,215,000 was from the Abatement, Control and Compliance appropriation.

In 1988 work continued on the interim development of the TSDF rules.

REGULATIONS, GUIDELINES, AND POLICIES -- OFFICE OF WATER

1990 Program Request

In 1990, the Agency requests a total of \$7,028,500 supported by 48.7 total workyears for this program, of which \$2,054,100 will be for the Salaries and Expenses appropriation and \$4,974,400 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$382,500 in Salaries and Expenses and a decrease of 12.0 workyears. The decrease reflects the reduction in the number of Publicly-Owned Treatment Works (POTWs) requiring corrective action and completion of the double-liner waiver assessment.

In 1990, the Agency will continue information-gathering and sampling of specific Domestic Sewage Study (DSS) industries -- wastewaters will be screened and analyzed for hazardous constituents. Data summaries and decision documents will be prepared for industries upon completion of a study of that industry.

The Agency will develop guidance for implementing the new specific discharge prohibitions, including ignitability/explosivity and reactivity/fume toxicity. The Agency will establish numerical discharge limits or other controls to protect worker health and safety, establish Best Professional Judgment technology-based limits for centralized water treaters, and perform toxicity testing and reduction evaluations for POTWs. Contract assistance will be provided to Regions and states for toxicity screening/testing and modifying/developing local limits for controlling hazardous and toxic pollutant discharges from industrial users discharging to POTWs.

Oversight of follow-up activity supplementing the original POTW Section 3007 survey will continue. EPA will continue to implement corrective action requirements for a small number of POTWs and continue to focus on control of hazardous and toxic pollutants through implementation of recommendations from the DSS.

In 1990, a corrective action program under Section 3004(u) of RCRA will continue to be implemented for Class I hazardous waste injection wells and will include assessments of prior or continuing releases and proposals for clean-up. The Regions will prepare assessments/site investigations of those wells where a previous or continuing release has been identified. Proposals for clean-up will be developed and incorporated into the Underground Injection Control (UIC) permits.

Headquarters will continue to develop guidance and provide technical advice for Regions and states in implementing hazardous waste disposal restrictions. Headquarters will continue to assist Regions and states in reviewing facility petitions and will provide technical assistance to Regions and states in enforcing the loss of facility interim status.

Pursuant to Sections 3004(f) and (g), the Agency will continue to review petitions from operators who want to continue injecting banned wastes. Any necessary UIC permit modifications required to implement the land ban provisions will also be reviewed. The Agency will continue to provide training for modeling applied to Class I hazardous waste well petition work. In addition, EPA will initiate a study to determine whether the Class I hazardous waste regulations should be applied to all Class I wells.

1989 Program

In 1989, the Agency is allocating a total of \$7,411,000 supported by 60.7 total workyears for this program, of which \$2,436,600 is from the Salaries and Expenses appropriation and \$4,974,400 is from the Abatement, Control and Compliance appropriation.

During 1989, EPA Headquarters is working towards developing regulations for the pharmaceuticals industry, which will improve controls on toxic pollutants, hazardous wastes, and hazardous constituents. Headquarters is also initiating regulation development for the equipment manufacturing and rebuilding industry and the hazardous waste treaters industry. Sludge use and disposal screening for RCRA constituents is continuing. The Regions and POTWs are developing new local limits to address hazardous pollutants and are increasing the number of spill prevention plans initiated. The Agency is also proposing changes to the National Pollutant Discharge Elimination System (NPDES) and general pretreatment regulations based on recommendations from the DSS.

EPA and states are continuing to implement the corrective action requirement for POTWs that accept hazardous waste. EPA will follow up on the original survey with a supplemental Section 3007 POTW survey. EPA and states are collecting and analyzing data submitted by POTWs, and the Regions are undertaking or overseeing necessary facility assessments, conducting visual site inspections and sampling visits, and implementing remedial investigations and corrective measures at appropriate POTWs. EPA and states are continuing to implement the RCRA corrective action requirements, focusing on the RCRA facility investigations and initiation of interim corrective actions where appropriate. Implementation of RCRA pretreatment and sludge control requirements, based on the DSS, continues through establishment of additional local limits for industrial uses of POTWs and enforcement of Federally-developed categorical standards and POTW developed local limits.

During 1989, the Agency is planning to propose and promulgate the "Second-Third" of the listed wastes regulated under Section 3004(g); as a result, EPA expects to review up to 40 petitions from operators of hazardous waste injection wells who are seeking exemptions from the injection ban, and revise or modify up to 75 hazardous waste injection well permits. Guidance outlining the criteria and procedures to be used in developing geologic data and modeling waste fate and transport is under development.

Regional UIC permit writers are conducting corrective action investigations for Class I hazardous waste wells, giving priority to wells with permits issued after November 1984, which do not include a schedule for corrective action. Owners or operators of Class I wells must certify compliance with requirements for groundwater monitoring and financial responsibility in order to retain authorization to inject hazardous materials. The Regions will also continue to review petitions from operators of hazardous waste injection wells seeking exemptions from the injection ban under Part 148.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,671,800 supported by 49.2 total workyears for this program, of which \$2,112,100 was from the Salaries and Expenses appropriation and \$4,559,700 was from the Abatement, Control and Compliance appropriation.

During 1988, revisions were made to the NPDES and general pretreatment regulations due to the DSS. The Regions also implemented regulatory changes, requiring additional discharge prohibitions. Specific regulatory development was undertaken on two industries. Information gathering and wastewater sampling and analysis of ten DSS industries continued and three decision documents were prepared, along with guidance documents. The Agency developed sludge disposal regulations and continued screening for hazardous constituents.

Headquarters developed procedural guidance and provided training to Regions and states on data collection and evaluation and on implementation of corrective action requirements for release of hazardous waste material from solid waste management units. Training was provided for POTWs that receive hazardous waste. POTWs were screened to identify those which received hazardous waste by dedicated pipe, truck or rail. Enforcement efforts focused on ensuring that POTWs comply with their reporting mandates and with other RCRA permit-by-rule requirements. The Agency proposed state sludge program regulations that link sludge disposal and use with hazardous waste requirements.

The Agency promulgated amendments to the UIC regulations for Class I hazardous waste injection wells and the standards and procedures for petitions for exemption from the injection ban. The effective dates were promulgated in August 1988, for restriction on injection of solvents, dioxins, California list wastes and certain "First-Third" listed wastes regulated under Section 3004(g). This included finalizing the associated regulatory impact analysis.

Regional UIC permit writers conducted corrective action investigations for Class I hazardous waste wells which included an assessment of prior and continuing releases and a proposal for clean-up. Regional assessments focused on the nature and extent of the release, the potential threat to human health and environment, and recommendations for clean-up.

Headquarters completed and forwarded the Municipal Wastewater Lagoon Study to Congress in December 1987.

REGULATIONS, GUIDELINES, AND POLICIES -- UNDERGROUND STORAGE TANKS (UST)

1990 Program Request

The Agency requests a total of \$7,904,800 supported by 68.2 total workyears for this program, of which \$3,739,000 will be for the Salaries and Expenses appropriation and \$4,165,800 will be for the Abatement, Control, and Compliance appropriation. This represents increases of \$336,400 for the Salaries and Expenses appropriations and \$400 for the Abatement, Control, and Compliance appropriation, and a 1.3 total workyear increase. The increases will provide additional implementation support for states and Indian tribes.

The Agency will continue its work to implement a national program based on principles of franchise management by ensuring that states meet the conditions for an approvable program before the formal application is submitted. The

number of state programs receiving Federal approval will increase as many states complete the legislative and regulatory changes required to ensure that 1) state programs are no less stringent than the Federal program, and 2) states have adequate enforcement authorities and capacity.

The Agency recognizes that all states may not apply and be approved for the UST program; however, the Agency will encourage and assist these states in the development of their UST programs. The Agency will also increase outreach efforts to tribal leaders and owner/operators with tanks on Indian lands, and will provide the tribes with compliance and enforcement assistance.

As the states implement the new regulations, the Agency will continue to provide ongoing technical information, assistance and training support. The Agency will work with the states to identify specific areas for performance improvement and assistance whether in technical, administrative, legal or financial areas. For example, the Agency will examine ways to extend the concepts developed for leak detection to other areas such as enforcement. The Agency also will select and provide limited funding for Targeted Improvement Projects to improve state capabilities.

Because of the size of the regulated tank universe, the Agency will emphasize voluntary compliance by owners and operators. Although enforcement efforts will focus on informal actions and streamlined enforcement procedures, Federal enforcement will target national precedent-setting actions.

1989 Program

In 1989, the Agency is allocating a total of \$7,568,000 supported by 66.9 total workyears for this program, of which \$3,402,600 is from the Salaries and Expenses appropriation and \$4,165,400 is from the Abatement, Control, and Compliance appropriation.

Due to the diverse nature of environmental problems caused by leaking USTs and the size of the regulated community, the Agency has designed the national program for implementation at the state and local level using principles of a franchiser-type organization. EPA's role in implementing this approach is to provide ongoing support and services to state programs. State needs are identified during routine communications and in program reviews. The Agency is continuing to assist the states to improve their performance in specific areas such as tank inspections, closures, enforcement and the administrative tasks of regulating thousands of tanks.

In 1989, the Agency will 1) provide technical support and training to states as they develop their programs; 2) review and approve a significant number of state program applications; and 3) assist states in preparing applications to meet Federal approval standards. The Agency is also assisting the states in developing communication strategies, and negotiates and oversees state grants.

The Agency's enforcement strategy emphasizes voluntary compliance and promotes innovative techniques to achieve non-voluntary enforcement.

EPA is continuing to develop informational tools for professional use, such as videos to demonstrate correct procedures for tank installation and tank closure. The Agency is also developing other videos and brochures for the general public.

The final rule for financial responsibility for tanks containing hazardous substances was issued in October 1988.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,542,200 supported by 56.5 total workyears, of which \$2,587,200 was from the Salaries and Expenses appropriation and \$3,955,000 from the Abatement, Control, and Compliance appropriation.

The Agency issued final regulations on corrective action, leak detection, and technical performance standards for new and existing tanks that contain petroleum products and hazardous substances, as well as final regulations on requirements for state programs. The Agency developed supplemental policies and guidances on the process and requirements for state regulatory program authorization.

The Agency negotiated UST grants with all states and provided technical assistance and guidance for implementation and enforcement. Efforts to assist the states with program development and the program application process included training and pilot projects on developing applications and a handbook on state financing mechanisms.

The Agency also developed and distributed informational tools including video tapes demonstrating correct procedures for tank installation and closure. Brochures were also developed and distributed, including Musts for USTs which describes the technical standards in plain English and a handbook on building state compliance programs.

HAZARDOUS WASTE
Financial Assistance

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

Hazardous Waste Management Financial Assistance To States					
Abatement Control and Compliance	\$68,593.7	\$66,000.0	\$66,020.0	\$70,000.0	\$3,980.0
TOTAL	\$68,593.7	\$66,000.0	\$66,020.0	\$70,000.0	\$3,980.0
Underground Storage Tanks State Grants					
Abatement Control and Compliance	\$7,110.0	\$9,000.0	\$9,000.0	\$9,000.0	
TOTAL	\$7,110.0	\$9,000.0	\$9,000.0	\$9,000.0	
TOTAL:					
Abatement Control and Compliance	\$75,703.7	\$75,000.0	\$75,020.0	\$79,000.0	\$3,980.0
Financial Assistance TOTAL	\$75,703.7	\$75,000.0	\$75,020.0	\$79,000.0	\$3,980.0



HAZARDOUS WASTE

Financial Assistance

Budget Request

The Agency requests a total of \$79,000,000 for this program for the Abatement, Control and Compliance appropriation. This is an increase of \$3,980,000 from the level provided in 1989.

HAZARDOUS WASTE MANAGEMENT FINANCIAL ASSISTANCE TO STATES

1990 Program Request

The Agency requests a total of \$70,000,000 for this program, all of which will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$3,980,000 to provide additional support for state corrective action, compliance monitoring, and development of state programs as they move toward authorization to administer the hazardous waste program.

EPA Regions will support the development of state capability in 1990. The states will increase efforts to develop legislation and regulations to achieve equivalence with the Federal hazardous waste management program. EPA expects that fifty states will be authorized for the base program and will be actively working toward authorization for specific Hazardous and Solid Waste Amendment (HSWA) provisions.

The states will ensure that noncompliance is identified and addressed through timely and appropriate enforcement actions and that handlers are returned to compliance. A priority activity will be compliance monitoring at generators and transporters, especially with respect to land ban requirements. The states will take enforcement actions against facilities and oversee adherence to compliance schedules. The states will take enforcement actions for violation of approved closure plans. The states will inspect all operating land disposal and incineration facilities annually, one half of all storage and treatment facilities and closed land disposal facilities, the mandated inspections at Federal and local government facilities, and a targeted portion of generators and transporters. Inspections will be conducted to support the processing of permit applications, and to ensure compliance with permit provisions or existing administrative and judicial actions.

The states will ensure that corrective action initiated in prior years is fully supported through the implementation of the appropriate remedy. Corrective action orders and compliance schedules in the permits will ensure that corrective measures are taken by the owner/operator at their facilities. States will monitor the progress of corrective actions through oversight of the owner/operator's RCRA Facility Investigation, development of the corrective measures study, and implementation of the remedy to ensure that work is performed correctly. New RCRA Facility Assessments will be initiated at storage and treatment facilities seeking permits. Judicial actions will be initiated when a permit schedule or administrative order is considered insufficient to compel the owner/operator to undertake corrective measures that would protect human health and the environment.

The states will continue processing an increasing number of permit modifications. Operating facilities' permits will require modification due to a number of factors, including corrective action requirements, facility improvements, expanding capacity, and changing waste streams. The states will focus on processing most closure plans for land disposal facilities by the end of 1990. Work will begin on the processing of permits for burners and blenders who burn waste as fuel, and post-closure permitting will increase in 1990.

1989 Program

In 1989, the Agency is allocating a total of \$66,020,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

States are required to amend their programs to incorporate the provisions of RCRA and HSWA; they are proposing legislation and upgrading regulations to achieve equivalence with the Federal hazardous waste management program.

Permitting efforts are directed toward meeting the November 1989 deadline for issuing permits to all operating incineration facilities and for processing permit modifications. The states are also completing processing of final permit determinations for land disposal facilities by the November 1988 deadline. The states are emphasizing compliance monitoring and enforcement efforts that will ensure adequate environmental safeguards for the generation, transportation, and disposal of hazardous waste. The states are investigating releases at facilities to determine the need for corrective action. As releases are identified, the states and EPA are ensuring that the owner/operators address the contamination.

1988 Accomplishments

In 1988, the Agency obligated a total of \$68,593,700, all of which was from the Abatement, Control and Compliance appropriation.

The states developed legislation and regulations to achieve equivalence with the Federal hazardous waste management program. A number of states submitted applications for authorization for the various provisions of HSWA. The states and Regions worked jointly on processing permits for those HSWA provisions for which states were not authorized, particularly corrective action.

The states placed a high priority on processing permit applications for land disposal facilities in order to meet the November 1988 HSWA deadline. Processing incineration permit applications was also a high priority due to the November 1989 deadline.

The states performed the mandated inspections and took appropriate enforcement actions. In addition, the states performed RCRA Facility Assessments to support the permitting program and to prioritize sites for corrective action.

UNDERGROUND STORAGE TANK GRANTS

1990 Program Request

The Agency requests a total of \$9,000,000 for this program, all of which will be for the Abatement, Control, and Compliance appropriation. This represents no change from 1989.

Resources provided to the states will be used to supplement state funds in the development and implementation of state Underground Storage Tank (UST) programs. State program approval is expected to be a major activity in 1990. Many states, having completed the necessary legislative and regulatory changes, will be applying for state program approval. In addition, these states will be building program capacity for administering the entire Federal program. Other states will continue to develop and update their legislative and regulatory standards, including technical, leak detection, financial responsibility and corrective action standards.

1989 Program

In 1989, the Agency is allocating a total of \$9,000,000 for this program, all of which is from the Abatement, Control, and Compliance appropriation. UST grant funds are being used primarily to stimulate development of state UST programs. Most states are initiating legislative and regulatory changes necessary for the state standards to be no less stringent than the final Federal standards. Some states will complete this process in 1989, and are then expected to begin the state program approval process. This includes working with EPA to ensure that the application is complete and then submitting the application for formal review and approval. In addition, states will be building program capacity for administering the entire Federal program.

The phasing-in of the financial responsibility and leak detection regulations will generate an additional workload as states process increased numbers of tank closures. Implementation of these regulations will require a systematic outreach and follow-up to owner/operators of tanks to increase voluntary compliance with the new regulations. States will continue to process tank notifications and take appropriate enforcement actions against violators.

1988 Accomplishments

In 1988, the Agency obligated \$7,110,000 for the program, all of which was from the Abatement, Control, and Compliance appropriation. UST grant funds were used to stimulate development of state UST programs. Forty-two states have developed legislative authorities and proposed regulatory standards to regulate underground storage tanks.

Implementation activities continued as states processed tank notifications. Enforcement efforts focused on the development of compliance and enforcement programs and, in some cases, on the enforcement of existing state regulations equivalent to the Interim Prohibition requirements. An important activity was the continuation of efforts to develop multi-year state funding mechanisms, such as permit and license fees, gasoline taxes and surcharges.



HAZARDOUS WASTE
Waste Management Strategies Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	
----- (DOLLARS IN THOUSANDS)						
PROGRAM -----						
Hazardous Waste Management Regulatory Strategies Implementation						
Salaries & Expenses	\$15,328.7	\$15,816.6	\$15,395.1	\$16,788.0	\$1,392.9	
Abatement Control and Compliance	\$3,997.9	\$8,279.8	\$8,257.2	\$10,257.2	\$2,000.0	
TOTAL	\$19,326.6	\$24,096.4	\$23,652.3	\$27,045.2	\$3,392.9	
TOTAL:						
Salaries & Expenses	\$15,328.7	\$15,816.6	\$15,395.1	\$16,788.0	\$1,392.9	
Abatement Control and Compliance	\$3,997.9	\$8,279.8	\$8,257.2	\$10,257.2	\$2,000.0	
Waste Management Strategies Implementation	TOTAL	\$19,326.6	\$24,096.4	\$23,652.3	\$27,045.2	\$3,392.9
PERMANENT WORKYEARS -----						
Hazardous Waste Management Regulatory Strategies Implementation	346.4	352.5	347.3	379.8	32.5	
TOTAL PERMANENT WORKYEARS	346.4	352.5	347.3	379.8	32.5	
TOTAL WORKYEARS -----						
Hazardous Waste Management Regulatory Strategies Implementation	376.3	380.0	374.8	379.8	5.0	
TOTAL WORKYEARS	376.3	380.0	374.8	379.8	5.0	



HAZARDOUS WASTE

Waste Management Strategies Implementation

Budget Request

The Agency requests a total of \$27,045,200 supported by 379.8 workyears for 1990, an increase of \$3,392,900 and 5 workyears from 1989. Of the request, \$16,788,000 will be for the Salaries and Expenses appropriation and \$10,257,200 will be for the Abatement, Control, and Compliance appropriation, increases of \$1,392,900 and \$2,000,000, respectively.

HAZARDOUS WASTE MANAGEMENT STRATEGIES IMPLEMENTATION

1990 Program Request

The Agency requests a total of \$27,045,200 supported by 379.8 workyears for this program, of which \$16,788,000 will be for the Salaries and Expenses appropriation and \$10,257,200 will be for the Abatement, Control, and Compliance appropriation. This represents increases of \$1,392,900 and \$2,000,000, respectively, and an increase of 5 workyears. The increases will allow EPA to provide additional support to states as they revise their non-hazardous waste management programs to achieve equivalence with the new Federal criteria for solid waste facilities.

The Regions will continue efforts to support the development and upgrading of state legislation and regulations to achieve equivalence with the Federal hazardous waste management program. This support from the Regions, along with the resources available to the states through the Hazardous Waste Management Financial Assistance grants, is designed to develop state capability to manage effective hazardous waste management programs. Fifty states will be authorized for the base program and will be actively working toward authorization for specific Hazardous and Solid Waste Amendment (HSWA) provisions.

In 1990, permitting activities will shift from meeting the statutory deadline for permitting incineration facilities to permit modification and permit appeal processing. The Regions and states will continue processing an increasing number of permit modifications in 1990. Operating facility permits will require modification due to a number of factors, including corrective action requirements, expanding capacity, and changing waste streams. A number of permits are likely to be appealed, particularly at land disposal facilities. The Regions and states will complete the processing of closure plans for land disposal facilities by the end of 1990, and will increase post-closure permit processing. Permit activities at Federal facilities will be a major workload. The Agency will also make permit determinations for Subpart X miscellaneous units.

Work will continue on implementing the RCRA Information System to enable the Regions and states to work closely together to monitor facility progress as well as national trends. Efforts to encourage states to adopt stronger solid

waste programs that incorporate the revised criteria will continue in 1990. Resources for Subtitle D will be used to leverage states toward innovative solutions to solid waste issues, and to support the states in the development of solid waste programs consistent with the revised national criteria.

1989 Program

In 1989, the Agency is allocating a total of \$23,652,300 supported by 374.8 total workyears for this program, of which \$15,395,100 is from the Salaries and Expenses appropriation and \$8,257,200 is from the Abatement, Control, and Compliance appropriation.

Permitting efforts are directed toward meeting the November 1989 deadline for issuing permits to all operating incineration facilities and processing facility applications for new and expanding capacity. Efforts to issue permits for environmentally significant operating storage and treatment and Subpart X facilities are continuing.

The Regions are processing an increasing number of permit modifications, particularly modifications that will result in new storage or treatment capacity or in processes that minimize a facility's waste. Other important permitting activities include addressing permit appeals and reviewing closure plans.

The Regions are supporting the development and upgrading of state legislation and regulations to achieve equivalence with the Federal hazardous waste management program, as well as to ensure national consistency. Through joint permitting, the Regions are processing those portions of the Resource Conservation and Recovery Act permits that include HSWA provisions for which the states are not authorized. The Regions are providing oversight of state activities to ensure technical adequacy, enforceability, and national consistency, as well as to provide state permit writers with technical assistance as needed. The Agency is providing specific guidance on especially complex regulatory requirements such as corrective action and closure and post-closure plans.

The Regions are assisting states and municipalities in their development of upgraded Solid Waste (Subtitle D) programs.

1988 Accomplishments

In 1988, the Agency obligated a total of \$19,326,600 supported by 376.3 total workyears, of which \$15,328,700 was from the Salaries and Expenses appropriation and \$3,997,900 was from the Abatement, Control, and Compliance appropriation.

The Regions supported the states in the development of hazardous waste management programs equivalent to the Federal program. With most states authorized for the pre-HSWA program, the Agency focused on oversight and technical support activities. The Regions provided technical assistance to the states as they developed legislation and regulations consistent with the provisions of HSWA and with regulatory revisions to the Federal base program.

The Regions and states worked together to process those permit applications with HSWA provisions for states not yet authorized. High priorities included processing the remainder of land disposal facility permit applications for the November 1988 deadline and processing a large number of incineration facility permits to work toward the November 1989 deadline.

HAZARDOUS WASTE
Emergency Planning - Community Right To Know

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Emergency Planning -
Community Right To Know

Salaries & Expenses	\$1,219.1	\$2,221.2	\$2,291.2	\$2,094.3	-\$196.9
Abatement Control and Compliance	\$2,147.8	\$2,938.0	\$2,912.7	\$2,938.0	\$25.3
Hazardous Substance Superfund	\$250.3				
TOTAL	\$3,617.2	\$5,159.2	\$5,203.9	\$5,032.3	-\$171.6

FEMA EMERGENCY TRAINING
- TITLE III

Abatement Control and Compliance	\$4,666.9				
TOTAL	\$4,666.9				

TOTAL:

Salaries & Expenses	\$1,219.1	\$2,221.2	\$2,291.2	\$2,094.3	-\$196.9
Abatement Control and Compliance	\$6,814.7	\$2,938.0	\$2,912.7	\$2,938.0	\$25.3
Hazardous Substance Superfund	\$250.3				

Emergency Planning - Community Right To Know	TOTAL \$8,284.1	\$5,159.2	\$5,203.9	\$5,032.2	-\$171.6
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PERMANENT WORKYEARS

Emergency Planning - Community Right To Know	19.7	29.5	29.5	32.0	2.5
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TOTAL PERMANENT WORKYEARS	19.7	29.5	29.5	32.0	2.5
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TOTAL WORKYEARS

Emergency Planning - Community Right To Know	22.3	30.5	30.5	32.0	1.5
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TOTAL WORKYEARS	22.3	30.5	30.5	32.0	1.5
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HAZARDOUS WASTE

Emergency Planning and Community Right-To-Know -- Title III

Budget Request

The Agency requests a total of \$5,032,300 supported by 32.0 total workyears for 1990. Of the request, \$2,094,300 will be for the Salaries and Expenses appropriation and \$2,938,000 will be for the Abatement, Control, and Compliance appropriation. These levels represent a decrease of \$196,900 and an increase of \$25,300 respectively, as well as an increase of 1.5 total workyears. The Agency is not requesting \$5,000,000 in emergency training grants under Section 305(a). Instead, the Federal Emergency Management Agency (FEMA) will request funding for these grants.

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW -- TITLE III

1990 Program Request

The Agency requests a total of \$5,032,300 supported by 32.0 total workyears for 1990. Of the request, \$2,094,300 will be for the Salaries and Expenses appropriation and \$2,938,000 will be for the Abatement, Control, and Compliance appropriation. These levels represent a decrease of \$196,900 and an increase of \$25,300 respectively, as well as an increase of 1.5 total workyears.

The increases reflect the expanding enforcement efforts and the increasing support needs of the states. A large quantity of new Title III information generated by the expansion of the Occupational Safety and Health Administration's hazard communication standard and by lower Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 311/312/313 thresholds will be sent to states and local communities in 1990. The Agency will develop risk communication and information management guidance to assist local groups in interpreting and using this new and complex information. The Agency will also continue to provide technical assistance and training in emergency plan development and review, table-top and field simulations, and hazard analysis. Assistance will also be given to Tribal governments to implement Title III programs on Indian lands. Finally, the framework for the enforcement program will be in place, and will be an area of increased emphasis in 1990.

1989 Program

In 1989, the Agency is allocating a total of \$5,203,900 supported by 30.5 total workyears, of which \$2,291,200 is from the Salaries and Expenses appropriation and \$2,912,700 is from the Abatement, Control, and Compliance appropriation.

The Agency provides program direction, regulations, and technical guidance for the National Emergency Planning and Community Right-to-Know program. Current activities include: 1) developing chronic toxicity, flammability, and

reactivity criteria for the extremely hazardous substance list and undertaking associated rulemaking; 2) developing and updating guidance for emergency planning; 3) developing regulations on reporting requirements and guidance on the organization and use of community right-to-know information; 4) evaluating trade secret claims; and 5) developing policies and procedures for implementing the enforcement program.

This is a critical year for the Emergency Planning and Community Right-to-Know program as many state and local governments are moving from planning to implementation activities in response to a 1989 statutory deadline. Many local emergency response plans are being completed and are moving into plan simulation and revision/improvement phase. The Agency provides relevant guidance, technical assistance, and training to states and priority area communities in conducting plan simulations and in improving these plans. The Agency also provides assistance to communities which have yet to meet the statutory deadlines, in order to expedite their compliance.

A shift from policy development to program implementation is also taking place in the Title III enforcement program as the Agency is working to finalize procedures for Title III hearings and to encourage states to begin taking on their own enforcement cases. To launch the enforcement effort, the Agency is handling several administrative actions this year, which demonstrate the procedures of the Title III enforcement program to the states.

The program is continuing to evaluate chemicals against the additional criteria for the extremely hazardous substances list and is preparing associated rulemaking where necessary. The Agency is evaluating the SARA Section 311/312 (community right-to-know) reporting thresholds set in 1987 and, if needed, will adjust the thresholds and required forms. Also, the Title III Indian policy will be finalized. The Agency is evaluating trade secret information and ruling on reporting exemptions resulting from Section 322 trade secrecy claims. Risk communication assistance is available to states and priority area communities to assist them in interpreting the information generated through the Title III reporting processes, in understanding the risk involved with listed chemicals, and in undertaking planning and other actions to protect public health and the environment.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,617,200 and 22.3 total workyears for this program, of which \$1,219,100 was from the Salaries and Expenses appropriation, \$2,147,800 was from the Abatement, Control, and Compliance appropriation, and \$250,300 was from the Hazardous Substance Superfund appropriation. Additionally, FEMA obligated a total of \$4,666,900 from the Abatement, Control and Compliance appropriation for Section 305(a) training grants to states; a total of \$333,000 will carryover into 1989 to complete the Agency's participation in FEMA's grant program.

In 1988, the Agency promulgated the Title III trade secret regulations and community right-to-know requirements. It also delisted extremely hazardous substances in response to the Section 302 updating and revision provisions of the Act. A draft Title III Indian policy was developed. Additionally, the

Agency completed its study of public alert programs and emergency systems for detecting, monitoring, and preventing releases of extremely hazardous substances into the environment and submitted the results of this study to Congress.

In keeping with its support role, the Agency, in cooperation with FEMA and the Department of Transportation, developed Technical Guidance for Hazards Analysis, to assist emergency planning efforts of the Local Emergency Planning Committees. Finally, the Agency held five national information management workshops and provided technical assistance and training for states and local governments.



Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>HAZARDOUS WASTE</u>	5-1
ENFORCEMENT	
Hazardous Waste Enforcement	5-41



HAZARDOUS WASTE
Hazardous Waste Enforcement

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

Hazardous Waste Enforcement					
Salaries & Expenses	\$19,399.3	\$19,368.5	\$19,296.7	\$21,563.2	\$2,266.5
Abatement Control and Compliance	\$20,398.6	\$21,100.0	\$20,926.7	\$21,926.7	\$1,000.0
TOTAL	\$39,797.9	\$40,468.5	\$40,223.4	\$43,489.9	\$3,266.5
TOTAL:					
Salaries & Expenses	\$19,399.3	\$19,368.5	\$19,296.7	\$21,563.2	\$2,266.5
Abatement Control and Compliance	\$20,398.6	\$21,100.0	\$20,926.7	\$21,926.7	\$1,000.0
Hazardous Waste Enforcement TOTAL	\$39,797.9	\$40,468.5	\$40,223.4	\$43,489.9	\$3,266.5
PERMANENT WORKYEARS					

Hazardous Waste Enforcement	447.0	455.2	452.9	489.5	36.6
TOTAL PERMANENT WORKYEARS	447.0	455.2	452.9	489.5	36.6
TOTAL WORKYEARS					

Hazardous Waste Enforcement	476.3	485.1	482.8	489.5	6.7
TOTAL WORKYEARS	476.3	485.1	482.8	489.5	6.7



HAZARDOUS WASTE

Hazardous Waste Enforcement

Budget Request

The Agency requests a total of \$43,489,900 supported by 489.5 workyears for 1990, increases of \$3,266,500 and 6.7 total workyears from 1989. Of the request, \$21,563,200 will be for the Salaries and Expenses appropriation and \$21,926,700 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$2,266,500 for the Salaries and Expenses appropriation and an increase of \$1,000,000 for the Abatement, Control, and Compliance appropriation.

HAZARDOUS WASTE ENFORCEMENT

1990 Program Request

The Agency requests a total of \$43,489,900 supported by 489.5 workyears for this program, of which \$21,563,200 will be for the Salaries and Expenses appropriation and \$21,926,700 will be for the Abatement, Control, and Compliance appropriation. This represents increases of \$2,266,500 and \$1,000,000, respectively, and an increase of 6.7 total workyears from 1989. The increases will support the ongoing workload associated with corrective action and allow additional capability enhancement and support activities for the states.

The Agency will develop policies to guide Regional oversight of state enforcement work, especially state corrective action activities in both authorized and unauthorized states. The Agency will issue additional guidance on corrective action implementation and enforcement as the corrective action program moves from the planning to the implementation phase. Headquarters will develop guidance on inspections and enforcement strategies for implementation of multimedia measures for disposal, such as air emissions and special wastes. Guidance on the enforcement of new regulations on land disposal of the prohibited wastes as well as a guidance for the detection of illegal disposal will be revised. Special waste guidance will also be developed. The Agency will revise and update national program policies on enforcement response and assessed penalties.

Headquarters will support the Regions to assist the states in developing the Hazardous and Solid Waste Amendments of 1984 (HSWA) enforcement authorization. Regions will evaluate state programs to identify effective legal and organizational structures, implementation problems and strategies, so that these practices can be systematically shared with other states. The program will increase emphasis on grant guidelines to ensure a nationally consistent enforcement program, especially in the area of corrective action.

Corrective action activities will continue at operating and environmentally significant closing facilities. The Agency will continue to assess the need for corrective action at facilities seeking operating permits and to prioritize closing facilities. The Agency will ensure that facilities requiring corrective action will be addressed by the most appropriate means,

whether through the permit/post-closure process, issuance of consent or unilateral administrative order, or Superfund authority. The Agency will continue to promote effective working relationships with owners and operators to facilitate remedy selection and successful implementation. Headquarters will develop and offer training to the Regions and the states on the selection process and criteria, as well as negotiation strategies.

The Agency will continue to ensure that state inspections are conducted annually at all operating land disposal facilities, and biennially at closed land disposal and treatment and storage facilities, as required by policy and statute. Significant generators will be inspected to ensure compliance with the expanding land ban regulations. The Agency will conduct annual inspections of state government treatment, storage, and disposal facilities. Facilities under an administrative order will generally receive a follow-up inspection to ensure a return to compliance. The Agency will conduct additional inspections at commercial facilities to ensure that these facilities can manage off-site Superfund wastes in an environmentally safe manner.

The Agency will coordinate closely with the states to effect a smooth implementation of the RCRA Information System, which emphasizes automated data transfer, wide accessibility, and standardized formats among the Regions, states, and headquarters.

1989 Program

In 1989, the Agency is allocating a total of \$40,223,400 supported by 482.8 total workyears, of which \$19,296,700 is from the Salaries and Expenses appropriation and \$20,926,700 is from the Abatement, Control, and Compliance appropriation.

The Agency is supporting the implementation of inspection activities and follow-up enforcement through guidance, training, and program performance evaluation. It provides technical enforcement support for corrective action oversight and remedy selection through guidance development and training. The Agency has revised its enforcement policy to allow the Regions and states to address the most environmentally significant facilities by a variety of appropriate means. As the enforcement program matures, headquarters will focus its efforts on the evaluation and revision of the implementation strategies and policies.

Compliance monitoring and enforcement actions are being taken against handlers that present the greatest threat to human health and the environment. The Agency is ensuring that environmentally significant releases are detected. The facilities that have urgent problems with releases or are in significant non-compliance are addressed by administrative and judicial enforcement actions. Inspections and follow-up enforcement actions for the surface impoundment retrofit deadline of November 1988 will continue. Federal, state, and local facilities that store, treat, or dispose of hazardous waste are being inspected annually as required by HSWA. Inspections of commercial land disposal and treatment facilities are conducted twice a year to ensure compliance with the Superfund Off-Site Policy. Through technical enforcement support and state program evaluations, the Agency ensures that the states take timely and appropriate enforcement actions. When the states are unwilling or unable, the Agency initiates enforcement actions. The Agency also brings enforcement actions for violations of HSWA provisions for which states are not authorized.

The corrective action resources support initial assessments, studies, and corrective action oversight of permitted or permit track facilities as well as facilities that have been issued an administrative order. Those treatment and storage facilities that are scheduled to be permitted in 1990 will receive a Resource Conservation Recovery Act (RCRA) facility assessment in 1989.

1988 Accomplishments

In 1988, the Agency obligated a total of \$39,797,900 supported by 476.3 total workyears, of which \$19,399,300 was from the Salaries and Expenses appropriation, and \$20,398,600 was from the Abatement, Control, and Compliance appropriation.

The Agency strengthened its compliance monitoring and enforcement program by issuing inspection guidances, by training Regional and state personnel, and by developing an overall strategy for enhancing the professional development of inspectors. The Agency issued a revised RCRA enforcement response policy to increase the ability of EPA and the states to respond to high priority violators. Coordination with Superfund was improved by the Off-Site Policy and the attendant proposed rule, by the expanded criteria for listing RCRA sites on the National Priorities List, and by the administrative record guidance. Land disposal restrictions, enforcement strategy for solvents/dioxins and California list wastes, natural gas pipeline enforcement strategy, and the enforcement strategy for the surface impoundment retrofitting requirements were developed. The Agency developed manuals for and training on corrective action orders.

The Agency performed the inspections required by statute and addressed all but a few of the significant non-compliers with formal enforcement actions. RCRA Facility Assessments were performed to support the incinerator and treatment and storage permit deadlines and to address significant closing facilities. In addition, the Agency, using a variety of means, began prioritizing RCRA facilities for corrective action work. RCRA Facility Investigations were formally required through imposition of permit conditions and issuance of administrative orders.



6. Pesticides

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	6-1
RESEARCH AND DEVELOPMENT	
Pesticides Research	6-7
Scientific Assessment.	6-13
Monitoring Systems and Quality Assurance	6-14
Health Effects	6-15
Environmental Engineering and Technology	6-16
Environmental Processes and Effects.	6-17
ABATEMENT AND CONTROL	
Registration, Special Registration and Tolerances	6-19
Registration, Special Registration and Tolerances.	6-21
Special Registration	6-23
Tolerances	6-24
Generic Chemical Review	6-25
Pesticides Program Implementation	6-30
Pesticides Program Implementation.	6-31
Pesticides Program Implementation Grants	6-32
ENFORCEMENT	
Pesticides Enforcement.	6-34
Pesticides Enforcement	6-35
Pesticides Enforcement Grants.	6-36



PESTICIDES

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$40,909.1	\$42,012.4	\$41,619.3	\$47,365.0	\$5,745.7
Abatement Control and Compliance	\$34,625.1	\$74,143.1	\$73,938.8	\$55,329.3	-\$18,609.5
Research & Development	\$6,804.9	\$8,122.8	\$7,789.3	\$7,530.3	-\$259.0
TOTAL, Pesticides	\$82,339.1	\$124,278.3	\$123,347.4	\$110,224.6	-\$13,122.8

PERMANENT WORKYEARS	770.8	824.0	816.0	853.3	37.3
TOTAL WORKYEARS	820.1	831.0	822.8	853.3	30.5
OUTLAYS	\$77,918.8	\$107,707.7	\$106,905.9	\$107,138.7	\$232.8

AUTHORIZATION LEVELS
 Authorization for the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) expired September 30, 1986. The FIFRA Amendments of 1988 reauthorized this program at a level of \$83,000.0 for 1989, and \$95,000.0 for 1990.



PESTICIDES

OVERVIEW AND STRATEGY

Pesticides are among the most beneficial and the most hazardous of substances. Pesticide products provide benefits to society, contributing to agricultural productivity and controlling human diseases. Yet they are inherently hazardous since they are specifically formulated to be injurious to living target organisms, and are deliberately introduced into the environment for that purpose. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, and sections 402, 406, 408, and 409 of the Federal Food, Drug, and Cosmetic Act (FFDCA) give the Environmental Protection Agency (EPA) authority to regulate the distribution and use of pesticides in the United States. The Agency is responsible for ensuring that pesticides perform their intended functions without unreasonable adverse effects on public health and the environment. This is a task of enormous scope and complexity. An estimated 3.5 billion pounds of pesticide active ingredients are used annually in this country, representing about 1,500 different active ingredients and 40,000 products.

The Agency's 1990 pesticide regulation strategy includes the following elements: 1) registration of new products and control of pesticide residues in the food chain, 2) review and reregistration of existing products, 3) encouragement of correct uses of pesticides, 4) research and development to support and improve EPA's ability to evaluate the risks and benefits of pesticides, and 5) the enforcement of pesticide regulations. In 1990, the Agency will place major emphasis on building Regional/state capabilities in the emerging areas of protecting ground water, workers occupationally exposed to pesticides, and endangered species, by increasing the Regional and state roles in tailored management strategies and implementation oversight. Emphasis will also be placed on issuing Second Round Reviews (SRR's - formerly called Final Regulatory Standards and Tolerance Reassessments) for existing pesticides with complete data sets, and achieving closure on the reregistration of these pesticides by revising formulations and labels for the affected end-use products, as required. The Agency will also continue efforts on storage and disposal of cancelled and suspended pesticides.

Registration Activities

FIFRA and FFDCA authorize EPA to set the terms and conditions of pesticide registration, marketing, and use. Under the registration program, new pesticide products are registered on the basis of data reviewed by Agency scientists, and current registrations are amended to add new uses and/or new formulations. Manufacturers are required to conduct a full range of health and environmental testing before marketing their new products. This testing uses sophisticated methodology and techniques, enabling the Agency to more accurately determine the potential for ground-water contamination, residues on food or feed, worker and applicator exposure, environmental risks, and chronic and acute health hazards.

The registration program also includes special registration and tolerance-setting activities. The special registration part of the program will continue to perform an auxiliary function by permitting certain unregistered pesticide uses for experimental purposes and to deal with emergency pest situations. It also provides oversight and guidance to state registration and experimental use

permit functions. The tolerance part of the program establishes safe and enforceable maximum permissible residue levels (or, in some instances, exemptions from tolerance requirements) for both active and inert pesticide ingredients in or on raw agricultural commodities and processed foods.

Generic Chemical Review (including Reregistration)

The registrations of the majority of existing pesticide chemicals are supported by data bases which the Agency has found insufficient by today's scientific standards to support the required determination of "no unreasonable adverse effects." The Generic Chemical Review program is designed to remedy this by requiring the upgrading of the scientific data base supporting registrations, reviewing available data about each chemical, and formulating scientifically based regulatory positions to guide the modification, cancellation, or reregistration of existing products and the registration of new products. The major activities which support the Generic Chemical Review program are as follows:

(1) In 1990, the Agency will undertake a major new initiative to build Regional and state capabilities to deal with emerging problems of protecting ground water, workers occupationally exposed to pesticides, and endangered species. These problems will entail a shift to more site-specific risk assessments and management decisions, requiring a more active Regional and state role, and corresponding increases in Regional positions and grants. The pesticides program will evolve from its historical focus on national licensing activities to a more balanced Headquarters/Regional/state effort.

(2) Registration Standards provide the basis for the interim reregistration of existing products and for the registration of new products containing currently registered active ingredients. Initially established on the basis of a thorough review of existing information on each pesticide, the Standards identify data gaps which must be filled, and explain the Agency's interim regulatory position on the use of active ingredients common to large numbers of pesticide products. In order to have the greatest impact, the program is initially focusing on the review of the highest volume pesticides and food-use pesticides.

(3) Second Round Reviews (SRR's) will be a major area of emphasis in 1990. When all the data required by a Registration Standard have been obtained, the initial Standard is revised by means of an SRR, which permits the Agency to reregister the active ingredient. This in turn permits the program to achieve real world impact through reregistration closure, involving end-use product formulation and label changes, as required, for all products containing reregistered active ingredients. Alternatively, review during either initial Registration Standard development or Second Round Review may result in initiation of a Special Review.

(4) Special Review is a formal process by which pesticides suspected of causing unreasonable adverse effects are subjected to intensive risk/benefit analysis, after which appropriate regulatory action is taken, such as restricting or prohibiting specific uses of a pesticide. Special Reviews will continue to be a high priority.

(5) With funds that were appropriated for storage, transportation and disposal of cancelled and suspended pesticides for the first time in 1988, and substantially increased in 1989, the Agency will complete final disposal of ethylene dibromide (EDB) stocks in 1989, and plans to dispose of a significant

portion of dinoseb. In 1990, depending on the availability of permitted facilities and on the results of test burns, the Agency will make significant progress on disposal of 2,4,5-T/Silvex stocks and any remaining dinoseb stocks.

Pesticides Enforcement

The enforcement provisions of FIFRA are carried out primarily through the cooperative efforts of the states and territories, under a program of Federal-state cooperative enforcement agreements established with EPA. Participating states and territories conduct use inspections, inspect pesticide-producing establishments, maintain marketplace surveillance, and inspect dealers and users of restricted-use pesticides. In most instances in which violations are detected, the states and territories develop and prosecute enforcement cases as appropriate. In limited numbers of cases, states and territories may refer cases to EPA for action. The Agency encourages the states and territories to design and operate their enforcement programs so as to place greatest emphasis upon compliance with the use provisions of FIFRA, thereby producing the greatest environmental benefit. The Agency will continue to support and manage these cooperative efforts in 1990.

The Agency conducts Federal pesticides compliance monitoring programs in cases in which states or territories are unable or unwilling to support comprehensive compliance monitoring programs of their own. Federal programs in such instances include use investigations, import and export surveillance, and the preparation and prosecution of enforcement cases. Other activities that are exclusively the responsibility of the Agency include providing technical and compliance assistance to the states, the regulated community and the public, and operating an automated data system which maintains information on compliance inspections, enforcement actions and pesticide production. In 1990 the Agency's technical and compliance assistance efforts will also emphasize worker protection, ground-water protection, development of state enforcement response policies under FIFRA sections 26 and 27, and tracking and enforcement of compliance with pesticide registration requirements.

Research and Development

The Office of Research and Development (ORD) will continue to support the Office of Pesticide Programs (OPP) by performing research in the areas of test method development and validation; biomarkers, dosimetry and extrapolation; exposure monitoring; environmental engineering and technology; environmental fate and transport; ecology risk assessment; and biotechnology. In addition biotechnology research will be performed in the health and environmental processes and effects area. This will include methods development for detecting, identifying and monitoring biological pesticide agents in mammalian cells and gene exchange potential.

Consulting Services

Consulting services are utilized by the Agency to support the Scientific Advisory Panel which, in accordance with section 25(d) of FIFRA, provides comments, evaluations and recommendations on actions and regulations proposed by the Agency.



PESTICIDES

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase+ Decrease- 1990 vs. 1989

PROGRAM ACTIVITIES				
Incremental Outputs				
Special Review Decisions....	14	13	13	---
New Chemical and Biochemical/ Microbial Agent Reviews....	348	330	330	---
Old Chemical Reviews.....	3,905	3,850	3,850	---
Amended Registration Reviews.....	10,380	4,560	4,560	---
New Use Reviews.....	457	300	300	---
Emergency Exemption Reviews.....	394	250	250	---
Experimental Use Permit Reviews.....	284	400	400	---
24(c) State Registration Reviews.....	892	475	475	---
Temporary Tolerance Petition Reviews.....	110	150	150	---
Tolerance Petition Reviews.....	456	475	475	---
Inert Ingredient Reviews.....	13	60	60	---
Producer Establishment Inspections a/.....	2,070	2,070	2,528	+458
Use/Reentry and Experimental Use Observations a/.....	18,000	18,000	19,284	+1,284
Marketplace Investigations a/.....	4,610	4,000	4,000	---
Import Inspections a/.....	300	315	315	---

PESTICIDES (continued)

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase+ Decrease- 1990 vs. 1989
PROGRAM ACTIVITIES				
Incremental Outputs				
Applicator License and Record Inspections.....	9,992	9,990	9,990	---
State Dealer Record Inspections.....	8,008	8,010	8,468	+458
Federal Laboratory Inspections.....	65	47	60	+13
Test Study Audits.....	390	219	344	+125
Registration Standard Guidance Packages Established.....	16	15	15	---
Second Round Reviews.....	9	10	10	---
Cumulative Outputs				
Registration Standard Guidance Packages Established.....	183	198	213	+15
Review of Incoming Studies on Existing Chemicals.....	2,038	2,628	3,218	+590

a/ Includes both Federal and State enforcement activities

Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	6-1
RESEARCH AND DEVELOPMENT	
Pesticides Research	6-7
Scientific Assessment.	6-13
Monitoring Systems and Quality Assurance	6-14
Health Effects	6-15
Environmental Engineering and Technology	6-16
Environmental Processes and Effects.	6-17



PESTICIDES
Pesticides Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Scientific Assessment -					
Pesticides					
Salaries & Expenses	\$415.8	\$439.5	\$125.4	\$146.5	\$21.1
Research & Development	\$307.5	\$343.6	\$12.0		-\$12.0
TOTAL	\$723.3	\$783.1	\$137.4	\$146.5	\$9.1
Monitoring Systems &					
Quality Assurance					
Pesticides					
Salaries & Expenses	\$391.7	\$424.1	\$376.7	\$354.5	-\$22.2
Research & Development	\$1,025.6	\$957.2	\$957.2	\$957.2	
TOTAL	\$1,417.3	\$1,381.3	\$1,333.9	\$1,311.7	-\$22.2
Health Effects -					
Pesticides					
Salaries & Expenses	\$2,021.5	\$2,052.6	\$2,045.3	\$2,331.5	\$286.2
Research & Development	\$1,666.4	\$1,667.9	\$1,667.9	\$1,817.9	\$150.0
TOTAL	\$3,687.9	\$3,720.5	\$3,713.2	\$4,149.4	\$436.2
Environmental					
Engineering And					
Technology - Pesticides					
Salaries & Expenses	\$48.5	\$170.3	\$169.8	\$115.8	-\$54.0
Research & Development	\$790.2	\$2,112.0	\$2,110.1	\$1,113.1	-\$997.0
TOTAL	\$838.7	\$2,282.3	\$2,279.9	\$1,228.9	-\$1,051.0
Environmental Processes					
& Effects - Pesticides					
Salaries & Expenses	\$3,032.8	\$3,029.7	\$3,040.5	\$3,861.8	\$821.3
Research & Development	\$3,015.2	\$3,042.1	\$3,042.1	\$3,642.1	\$600.0
TOTAL	\$6,048.0	\$6,071.8	\$6,082.6	\$7,503.9	\$1,421.3
TOTAL:					
Salaries & Expenses	\$5,910.3	\$6,116.2	\$5,757.7	\$6,810.1	\$1,052.4
Research & Development	\$6,804.9	\$8,122.8	\$7,789.3	\$7,530.3	-\$259.0
Pesticides Research TOTAL	\$12,715.2	\$14,239.0	\$13,547.0	\$14,340.4	\$793.4

PESTICIDES
Pesticides Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

PERMANENT WORKYEARS					

Scientific Assessment - Pesticides	6.1	6.7	1.7	1.5	-.2
Monitoring Systems & Quality Assurance Pesticides	6.7	7.3	5.9	5.7	-.2
Health Effects - Pesticides	32.7	38.7	38.7	39.5	.8
Environmental Engineering And Technology - Pesticides	.8	3.0	3.0	2.0	-1.0
Environmental Processes & Effects - Pesticides	54.4	61.8	61.8	62.7	.9
TOTAL PERMANENT WORKYEARS	100.7	117.5	111.1	111.4	.3
TOTAL WORKYEARS					

Scientific Assessment - Pesticides	6.5	6.7	1.7	1.5	-.2
Monitoring Systems & Quality Assurance Pesticides	7.0	7.3	5.9	5.7	-.2
Health Effects - Pesticides	36.0	38.7	38.7	39.5	.8
Environmental Engineering And Technology - Pesticides	.8	3.0	3.0	2.0	-1.0
Environmental Processes & Effects - Pesticides	61.7	61.8	61.8	62.7	.9
TOTAL WORKYEARS	112.0	117.5	111.1	111.4	.3

PESTICIDES

Pesticides Research

Principal Outputs by Objective

Objective 1: Develop and Validate Test Methods for FIFRA Studies

- 1990: o Report on teratological responses in M. Beryllina for environmental hazard assessment (Environmental Processes)
- o Report on immunotoxicology methods development and validation in the rat (Health)
- 1989: o Report on short-term predictors of chronic toxicity to pesticides on crustacean populations (Environmental Processes)
- o Assessment of neurotoxicity in workers occupationally exposed to organophosphorus pesticides: A neurobehavioral and biochemical study (Health)
- 1988: o Report on the role of salinity in toxicity of pesticides to crustaceans (Environmental Processes)

Objective 2: Perform Health Research on Biological Markers, Dosimetry and Extrapolation

- 1990: o Report on markers and dosimetry research activity for exposure monitoring (Monitoring)
- 1988: o Systems plan for implementation of biomarkers and pharmacokinetics research program (Monitoring)

Objective 3: Perform Ecological Research Validation

- 1990: o Report on experimental design studies for aquatic ecosystem testing (Environmental Processes)
- o Report on field censusing techniques for large scale avian field studies (Environmental Processes)
- 1989: o Report on field validation of enclosure protocols for evaluating pesticides in natural waters (Environmental Processes)
- 1988: o Report on effects of field applications of agricultural pesticides on estuarine biota (Environmental Processes)

Objective 4: Perform Engineering Research in Support of FIFRA

- 1990: o Report on the effects of co-firing chlorinated wastes with high nitrogen compounds on NOx emissions (Engineering)

- o Study results on the combustion effects of sulfur on a bromine containing waste (Engineering)
- 1989: o Report on the performance results of a pilot-scale trial burn of Dinoseb pesticide formulations (Engineering)
- o Report on performance result of full-scale incineration operations of EDB inventory disposal (Engineering)
- 1988: o Report on field study of the effectiveness of protective clothing for greenhouse pesticide applicators (Engineering)
- o Report on the effectiveness of protective clothing materials for agricultural pesticide operations (Engineering)

Objective 5: Perform Exposure Monitoring Research

- 1990: o Report on exposure of field applications of biological agents used as agricultural pesticides (Monitoring)
- 1989: o Final report on the Non-Occupational Pesticide Exposure Study (NOPES) methodology (Monitoring)
- 1988: o Progress report on completion of the NOPES (Monitoring)

Objective 6: Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents

- 1990: o Report on test methods for BCAs to avians (Environ. Processes)
- o Laboratory methods for appraising the safety of a microbial pest control agent in freshwater systems (Environmental Processes)
- 1989: o Final report on development of enclosed multispecies systems for testing effects of microbial pest control agents on estuarine organisms (Environmental Processes)
- o Report on dispersal of BCAs released into the atmosphere (Environmental Processes)
- 1988: o Report on the movement and survival of a biological control agent in two natural systems (Environmental Processes)

Objective 7: Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols

- 1990: o Users manual for updated TEAM Model (Environmental Processes)
- 1989: o Final report on biological data base for risk assessment (Env. Processes)
- 1988: o Report: Physiochemical factors affecting toxicity: pH, salinity and temperature (Environmental Processes)

Objective 8: Provide Support Services for FIFRA Activities

- 1989: o Annual report on operation of pesticide repository (Monitoring)
- 1988: o Report on the spread of antibiotic resistance in the environment (Monitoring)



PESTICIDES

Pesticides Research

Budget Request

The Agency requests a total of \$14,340,400 supported by 111.4 total workyears for 1990, an increase of \$793,400 and 0.3 total workyears from 1989. Of the request, \$6,810,100 will be for the Salaries and Expenses appropriation and \$7,530,300 will be for the Research and Development appropriation, an increase of \$1,052,400 and a decrease of \$259,000, respectively.

Program Objectives

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Federal Food, Drug and Cosmetics Act require the regulation of pesticide use to avoid unreasonable adverse effects to public health and the environment. The research program improves our understanding of how pesticides interact with human activities and the environment, to assure that their use minimizes damage from pests, while maximizing the protection of man's food, health and the environment.

Objective 1: Develop and Validate Test Methods for FIFRA Studies. This research effort develops and validates environmental and health test methods for use by industry to assist them in meeting pesticide registration requirements and enforcement responsibilities under Sections 3 and 26 of FIFRA.

Objective 2: Perform Health Research on Biological Markers, Dosimetry, and Extrapolation. This research effort develops methods for extrapolating from high to low doses between mammalian species, evaluates dermal penetration of pesticides and examines structure activity relationships. Biological markers are evaluated and tested to determine their potential use in exposure monitoring studies. This information is used by the Agency to evaluate pesticide data submitted by industry as part of the registration and re-registration process.

Objective 3: Perform Ecological Research Including Transport, Fate and Field Validation. This research effort validates laboratory studies by quantifying pesticide effects through field testing in order to evaluate mortality, reproduction and recovery potential of fishes, invertebrates, birds and other organisms. This approach allows comparison between laboratory studies and actual field results. This research also investigates the movement of pesticides through the environment in order to determine the eventual disposition of pesticides in the environment.

Objective 4: Perform Engineering Research in Support of FIFRA. This research effort provides performance information on protective clothing and equipment for pesticide loaders, mixers, and applicators to meet the Office of Pesticides Programs' (OPP) regulatory needs under FIFRA.

Objective 5: Perform Exposure Monitoring Research. This research effort develops equipment and specialized monitoring protocols and procedures for

total human exposure monitoring for pesticide exposure to characterize sources and routes of exposure for national pesticide monitoring efforts.

Objective 6: Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. This research effort evaluates the effects of microbial and biochemical pest control agents (MBPCAs) and products of biotechnology on humans and the environment to support registration activities of OPP.

Objective 7: Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. This research effort provides the means to determine the risk posed to actual ecosystems by environmental pollutants by determining critical endpoints and devising mathematical models in order to predict impacts. This work will provide risk assessment protocols and guidelines for use in determining potential effects to terrestrial and aquatic ecosystems.

Objective 8: Provide Support Services for FIFRA Activities. This activity provides support to risk and exposure assessments by providing quality assurance materials and reference compounds for pesticide residue analyses.

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$146,500 supported by 1.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$21,100 which reflects increased personnel and support costs. There is a minor decrease of 0.2 in total workyears which reflects a consolidation of resources for the Regional Scientists Program within the Interdisciplinary media.

Provide Support Services for FIFRA Activities. The Scientific Assessment program will continue to prepare and review health risk assessments for cancer, mutagenicity, adverse reproductive/developmental effects and exposure to support OPP implementation of FIFRA Section 3 provisions for evaluating risk from pesticides use. Support will also be provided for laboratory data audits.

1989 Program

In 1989, the Agency is allocating a total of \$137,400 supported by 1.7 total workyears for this program, of which \$125,400 is from the Salaries and Expenses appropriation and \$12,000 is from the Research and Development appropriation. The program will continue to prepare and review health risk assessments and provide support for laboratory data audits.

1988 Accomplishments

In 1988, the Agency obligated a total of \$723,300 supported by 6.5 total workyears for this program, of which \$415,800 was from the Salaries and Expenses appropriation and \$307,500 was from the Research and Development appropriation. In 1988, activities included support for laboratory data

audits, participation in OPP's hazard evaluation peer review panel which reviewed over 40 chemicals for regulatory analysis, review of National Cancer Institute human data on the herbicide 2,4-D, and review of developmental toxicity data on larvadex and carbaryl.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$1,311,700 supported by 5.7 total workyears for this program, of which \$354,500 will be for the Salaries and Expenses appropriation and \$957,200 will be for the Research and Development appropriation. This represents a decrease of \$22,200 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation. There is a decrease of 0.2 total workyears. The decrease in the Salaries and Expenses appropriation and total workyears reflects a small shift of resources due to the transfer of the operation of the pesticides repository to the Office of Pesticides and Toxic Substances.

Develop and Validate Test Methods for FIFRA Studies. Monitoring methods and strategies will be developed for determining the effect of agricultural pesticide usage on the quality of surface and ground water systems. Research will focus on identifying factors which are critical to ground water susceptibility.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. Biological markers will be tested for their use as sensitive indicators of exposure. Candidate biological markers will be tested under control and field conditions to estimate the capability and accuracy of these measurements compared to conventional approaches.

Perform Exposure Monitoring Research. This research will use statistical tools, monitoring equipment, protocols and methodologies based on total human exposure monitoring of pesticides to assess exposure of lawn and garden pesticides to infants and toddlers.

Perform Research On Biotechnology and Microbial and Biochemical Pest Control Agents. Protocols for use in regulatory decision-making concerning identification, fate and survival of biological agents, including recombinant and DNA will be developed.

Provide Support Services for FIFRA Activities. Quality assurance research regarding sample collection and analysis procedures will be conducted. This will include research on the selection of representative samples and how to optimize instrument settings for data analysis.

1989 Program

In 1989, the Agency is allocating a total of \$1,333,900 supported by 5.9 total workyears for this program, of which \$376,700 is from the Salaries and Expenses appropriation and \$957,200 is from the Research and Development appropriation. In 1989, a coordinated effort with the health research program will be continued to identify and test biological markers of exposure to

priority pesticide chemicals. Monitoring equipment, expertise and staff to provide protocols and methodologies for total human exposure monitoring for pesticides will be provided.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,417,300 supported by 7.0 total workyears for this program, of which \$391,700 was from the Salaries and Expenses appropriation and \$1,025,600 was from the Research and Development appropriation. An annual report was published for the pesticides and industrial chemicals repository. The field portion of the Non-Occupational Pesticide Exposure Study (NOPES) on exposure to common household pesticides was completed.

HEALTH EFFECTS

1990 Program Request

The Agency requests a total of \$4,149,400 supported by 39.5 total workyears for this program, of which \$2,331,500 will be for the Salaries and Expenses appropriation and \$1,817,900 will be for the Research and Development appropriation. This represents an increase of \$286,200 in the Salaries and Expenses appropriation and \$150,000 in the Research and Development appropriation and 0.8 total workyears. The increases will be used to fund new research in biotechnology. The workyear decrease reflects a consolidation of resources for the Regional Scientists Program within the Interdisciplinary media.

Develop and Validate Test Methods for FIFRA Studies. Health effects efforts will develop and refine bioassays for the detection of adverse developmental, reproductive, mutagenic, carcinogenic, neurotoxic and immunotoxic effects for use by industry as part of FIFRA Section 3 evaluation of risks. New projects will include determination of age related subpopulation neurotoxic sensitivity to pesticides and development of procedures to determine if the immune system has been compromised.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. Research efforts will develop models to assess health risks and improve methodology for extrapolating results of animal toxicity studies into risk estimates for humans. Studies will include comparison of in vivo and in vitro methods for estimating the dermal penetration of pesticides and potential interaction between alterations in maternal health status and susceptibility to pesticides exposures. These models will assist in the evaluation of pesticides data submitted as part of the registration and re-registration process.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Research in this area will provide methods for detecting, identifying and monitoring biological pesticide agents in mammalian cells as a basis for test protocols to support microbial pesticide registration. Research will be accelerated on new generation pesticides that are produced through genetic engineering. The results of this research will provide the basis for validation of Subpart M guidelines for testing microbial pesticides.

1989 Program

In 1989, the Agency is allocating a total of \$3,713,200 supported by 38.7 total workyears for this program, of which \$2,045,300 is from the Salaries and Expenses appropriation and \$1,667,900 is from the Research and Development appropriation. Data on the effects of microbial and biochemical pest control agents and genetically engineered pesticides will be provided, methods to detect adverse alterations in the reproductive processes in animals to allow for more accurate evaluations of reproductive development and function are being developed, and research to develop animal models to assess health risks caused by pesticides is being performed.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,687,900 supported by 36.0 total workyears for this program, of which \$2,021,500 was from the Salaries and Expenses appropriation and \$1,666,400 was from the Research and Development appropriation. Ten reports were provided in the areas of methods development, biomarkers and biotechnology, including non-cancer endpoints and the effects of biological agents on mammalian cells for use in regulatory analysis.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$1,228,900 supported by 2.0 total workyears for this program, of which \$115,800 will be for the Salaries and Expenses appropriation and \$1,113,100 will be for the Research and Development appropriation. This represents decreases of \$54,000 and \$997,000, respectively, and a decrease of 1.0 total workyear. This decrease reflects the completion of a significant portion of research on the destruction/disposal technologies for indemnified pesticides and the evaluation of protective clothing for agricultural workers.

Perform Engineering Research in Support of FIFRA. A broad-based cooperative environmental management program will be initiated for individual users of pesticides. Brochures, workshops, video tapes and demonstrations designed to increase user knowledge on the safe use of pesticides will be developed. Treatment and disposal strategies for classes of pesticides will be developed and technical assistance for the disposal of currently indemnified pesticides will continue.

1989 Program

In 1989, the Agency is allocating a total of \$2,279,900 supported by 3.0 total workyears for this program, of which \$169,800 is from the Salaries and Expenses appropriation and \$2,110,100 is from the Research and Development appropriation. Engineering research activities are continuing to provide information on the effectiveness of protective garments for pesticide mixers, loaders and applicators as well as research on disposal/destruction technologies for cancelled and suspended pesticides.

1988 Accomplishments

In 1988, the Agency obligated a total of \$838,700 supported by 0.8 total workyears for this program, of which \$48,500 was from the Salaries and Expenses appropriation and \$790,200 was from the Research and Development appropriation. A study of pesticide exposure to greenhouse workers using protective clothing was completed. The data from the study will serve as a basis for the extension of the agricultural worker protection standards to greenhouse workers.

ENVIRONMENTAL PROCESSES AND EFFECTS

1990 Program Request

The Agency requests a total of \$7,503,900 supported by 62.7 total workyears for this program, of which \$3,861,800 will be for the Salaries and Expenses appropriation and \$3,642,100 will be for the Research and Development appropriation. This represents increases of \$821,300 and \$600,000, respectively, and an increase of 0.9 total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The workyear increase and the increase in the Research and Development appropriation will support additional research in biotechnology.

Develop and Validate Test Methods for FIFRA Studies. Research efforts will develop and validate bioassays and other methodologies for use as standardized testing protocols to determine the effects of chemical pesticides on marine and fresh-water animals. These efforts will provide testing methods which the Agency can recommend for use by pesticide manufacturers.

Perform Ecological Research Including Transport, Fate and Field Validation. Research in this area will concentrate on the development and validation of techniques and models to measure and predict pesticide transport, degradation, exposure, effects and fate in the environment. The effects of pesticides on estuarine freshwater and terrestrial (avian) biota will be investigated. Soil processes, run-off problems, and agricultural practices will be evaluated for their relationship to ground water pollution. Modeling and predictive techniques, exposure dosing relationships, sediment toxicity and hazard assessment criteria will be evaluated in aquatic habitats.

Perform Research on Biotechnology and Microbial and Biochemical Pest Control Agents. Research in this area will develop and improve testing protocols for unaltered Microbial Pest Control Agents (MPCAs) and genetically altered Biological Control Agents (BCAs). Dispersal, effect and survival of BCAs will be studied. Research results will support modifications of testing protocols for Subpart M guidelines used by industry to provide registration data.

Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. Research in this area will develop methodologies to predict risk to ecosystems. The development of ecological risk assessment protocols and guidance for investigating terrestrial and aquatic ecosystems is necessary to quantify the probability that adverse effects may occur as a result of exposure

to pesticides and will allow estimation of the significance of such effects in the environment. Activities will include modeling and determining species susceptibility, including exposure and uptake of pesticides by birds, fish, mollusks and other important populations. Physiochemical factors and impacts of pesticides on different populations will be incorporated into ecological risk assessments.

1989 Program

In 1989, the Agency is allocating a total of \$6,082,600 supported by 61.8 total workyears for this program, of which \$3,040,500 is from the Salaries and Expenses appropriation and \$3,042,100 is from the Research and Development appropriation. This program will develop test methods in support of FIFRA guidelines, perform research on transport, fate and field validation, and determine the effects of biological pest control agents and develop risk assessment techniques.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,048,000 supported by 61.7 total workyears for this program, of which \$3,032,800 was from the Salaries and Expenses appropriation and \$3,015,200 was from the Research and Development appropriation. Eleven major reports were supplied to users and the public which covered four research areas: test methods; transport/fate/field validation; biotechnology; and risk assessment.



Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	6-1
ABATEMENT AND CONTROL	
Registration, Special Registration and Tolerances	6-19
Registration, Special Registration and Tolerances.	6-21
Special Registration	6-23
Tolerances	6-24
Generic Chemical Review	6-25
Pesticides Program Implementation	6-30
Pesticides Program Implementation.	6-31
Pesticides Program Implementation Grants	6-32



PESTICIDES
Registration, Special Registration & Tolerances

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Registration, Special
Registration, and
Tolerances

Salaries & Expenses	\$8,517.3	\$13,726.5	\$13,666.2	\$14,188.4	\$522.2
Abatement Control and Compliance	\$3,233.5	\$3,230.0	\$3,045.1	\$3,016.7	-\$28.4
TOTAL	\$11,750.8	\$16,956.5	\$16,711.3	\$17,205.1	\$493.8

Special Registration
Salaries & Expenses

	\$1,991.1
TOTAL	\$1,991.1

Tolerances

Salaries & Expenses	\$2,920.1
TOTAL	\$2,920.1

TOTAL:

Salaries & Expenses	\$13,428.5	\$13,726.5	\$13,666.2	\$14,188.4	\$522.2
Abatement Control and Compliance	\$3,233.5	\$3,230.0	\$3,045.1	\$3,016.7	-\$28.4

Registration, Special Registration & Tolerances	TOTAL \$16,662.0	\$16,956.5	\$16,711.3	\$17,205.1	\$493.8
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PERMANENT WORKYEARS

Registration, Special
Registration, and
Tolerances

	155.7	267.2	265.9	265.9
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Special Registration

	41.3
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Tolerances

	67.4
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TOTAL PERMANENT WORKYEARS

	264.4	267.2	265.9	265.9
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PESTICIDES
Registration, Special Registration & Tolerances

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Registration, Special Registration, and Tolerances	166.0	267.2	265.9	265.9
Special Registration	43.2			
Tolerances	70.6			
TOTAL WORKYEARS	279.8	267.2	265.9	265.9

PESTICIDES

Registration, Special Registration, and Tolerances

Budget Request

The Agency requests a total of \$17,205,100 supported by 265.9 total workyears for 1990, an increase of \$493,800 and no change in total workyears from 1989. Of the request, \$14,188,400 will be for the Salaries and Expenses appropriation and \$3,016,700 will be for the Abatement, Control and Compliance appropriation, an increase of \$522,200 in the Salaries and Expenses appropriation and a decrease of \$28,400 in the Abatement, Control and Compliance appropriation.

This request reflects the merger in 1989 of the Registration, Special Registration, and Tolerance programs into one program.

REGISTRATION, SPECIAL REGISTRATION, AND TOLERANCES

1990 Program Request

The Agency requests a total of \$17,205,100 supported by 265.9 total workyears for this program, of which \$14,188,400 will be for the Salaries and Expenses appropriation and \$3,016,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$522,200 in the Salaries and Expenses appropriation, reflecting increased personnel and support costs, a decrease of \$28,400 in the Abatement, Control and Compliance appropriation, and no change in total workyears.

In 1990, the Agency expects to conduct 330 reviews of new chemicals and biochemical/microbial agents, 3,850 reviews of old chemicals, 4,560 amended registration reviews, 300 new use reviews, and 475 tolerance petition reviews. Registration reviews will emphasize the impact on ground water and endangered species. Rapid communication with affected parties and states and other measures will be continued to minimize processing times and backlogs. Special emphasis will continue to be placed on the regulatory implications of genetically engineered, microbial pesticides (GEMP's) and necessary interagency coordination.

The emphasis on processing of new chemicals and new uses (especially the first food use of any pesticide) will be continued in 1990. The findings of a productivity initiative related to old chemicals and amendments will be implemented but the impact cannot be determined at this time.

Increased emphasis will be given to ground-water protection including registrant-performed monitoring, more extensive use of environmental fate test data, geographical restrictions and restricted use classifications. These measures will help prevent future environmental clean-up problems.

Regional liaison will be improved by working closely with the Regional pesticide experts and other Regional staff to improve Regional and state understanding of Headquarters regulatory activities. Regions will be more routinely involved in consultations on policies affecting their mission, facilitating enforcement, enhancing public understanding and compliance with

EPA policies, and improving oversight of section 18 experimental use permit reviews and section 24(c) state and local need programs. The burden on Headquarters resources will be relieved and programs run more effectively by addressing special problems and Regional and state issues (e.g., container disposal and ground-water contamination) at the Regional level.

Stringent criteria for granting section 18 exemptions, such as consideration of progress towards permanent registration and clarification of "emergency" and "significant economic loss" as criteria used in considering emergency exemptions, will continue to be applied to avoid circumvention of the full registration process. Headquarters will continue to work closely with the Regions to monitor emergency exemptions and state and local needs provisions to prevent circumvention of registration requirements.

Emphasis will be placed on policies to ensure that tolerances reflect the most current regulatory status of each active ingredient including revocation of tolerances on cancelled pesticides and tolerance reassessments in conjunction with Registration Standard review. The processing of tolerance petitions will be modified, as required, based on the National Academy of Sciences (NAS)-Delaney report follow-up decisions. A complete Tolerance Assessment System (TAS), used to determine estimates of dietary exposure to pesticide residues, will be available in micro-computer form for use by Agency officials to improve decision-making and work-flow. Tolerance fees will be increased to reflect any increase in the General Schedule pay-scale.

1989 Program

In 1989, the Agency is allocating a total of \$16,711,300 supported by 265.9 total workyears for this program, of which \$13,666,200 is from the Salaries and Expenses appropriation and \$3,045,100 is from the Abatement, Control and Compliance appropriation.

In 1989, registration reviews are emphasizing new chemicals and new uses to facilitate the rapid availability of new, potentially safer chemicals which may replace older, more hazardous ones still in use. The program continues to promote ground-water protection and worker/applicator safety. The old chemical and amendment review process is being evaluated to reduce costs and processing times while ensuring the quality of required reviews. A new rule on restricted use classification for ground-water contaminating substances is planned for publication in 1989.

In 1989, state participation in the Emergency Exemption, Experimental Use Permit, and State and Local Needs programs is being enhanced through EPA guidance and close Federal/state cooperation. For experimental use permits, special emphasis is being placed on the review of products of biotechnology, which involves special skills and expedited review not required of more conventional pesticides.

The TAS is being updated and refined for use by Agency risk managers. Increased emphasis is being placed on evaluating potential risks of inert ingredients and contaminants. Crop group tolerances continue to be used where applicable to reduce data requirements and efficiently deal with minor uses. A strategy for implementing the recommendations in the 1987 NAS report is being prepared.

1988 Accomplishments

In 1988, the Agency obligated a total of \$11,750,800 supported by 166.0 total workyears for this program, of which \$8,517,300 was from the Salaries and Expenses appropriation and \$3,233,500 was from the Abatement, Control and Compliance appropriation.

In 1988, resources were shifted from old chemical and amended registration reviews to the Regions through the Pesticide Program Implementation program (formerly Certification and Training) in order to develop an expert Regional capability for pesticide regulatory activities. An evaluation of the productivity of the old chemicals and amendments review process was initiated to attempt to reduce the cost of these activities while ensuring adequate quality of required reviews. Any cost reductions achieved through the productivity initiative will result in increased outputs and shorter delays.

Proposed revisions to the Worker Protection Standards and a final rule for registration user fees were published in 1988. Registration user fees were implemented in June 1988 but subsequently superseded by the 1988 amendments to FIFRA, which established a separate reregistration fee system and suspended the collection of the registration fee.

Based on the 1987 inerts policy, inerts of toxicological concern are to be removed from pesticide products and pesticide product labels are to be amended accordingly. Such inerts that remain in use undergo data call-ins. The continually updated, computer-based TAS was used for determining estimates of dietary exposure to pesticide residues. Crop group tolerances continued to be used where applicable to reduce data requirements and effectively deal with minor uses.

SPECIAL REGISTRATION

1990 Program Request

No resources are requested for this program in 1990 due to its consolidation in 1989 within the new Registration, Special Registration, and Tolerances program.

1989 Program

In 1989, resources for this program are being consolidated within the new Registration, Special Registration, and Tolerances program.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,991,100 supported by 43.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1988, the Special Registration program regulated the experimental use, emergency use, and state registration of pesticides.

TOLERANCES

1990 Program Request

No resources are requested for this program in 1990 due to its consolidation in 1989 within the new Registration, Special Registration, and Tolerances program.

1989 Program

In 1989, resources for this program are being consolidated within the new Registration, Special Registration, and Tolerances program.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,920,100 supported by 70.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1988, the Tolerance program established safe pesticide residue levels on food and feed as required by the Federal Food, Drug, and Cosmetic Act.

PESTICIDES
Generic Chemical Review

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Generic Chemical Review					
Salaries & Expenses	\$16,442.8	\$16,557.7	\$16,346.7	\$18,940.6	\$2,593.9
Abatement Control and Compliance	\$18,331.9	\$58,004.7	\$57,985.8	\$26,904.7	-\$31,081.1
TOTAL	\$34,774.7	\$74,562.4	\$74,332.5	\$45,845.3	-\$28,487.2

TOTAL:					
Salaries & Expenses	\$16,442.8	\$16,557.7	\$16,346.7	\$18,940.6	\$2,593.9
Abatement Control and Compliance	\$18,331.9	\$58,004.7	\$57,985.8	\$26,904.7	-\$31,081.1

Generic Chemical Review	TOTAL	\$34,774.7	\$74,562.4	\$74,332.5	\$45,845.3	-\$28,487.2
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PERMANENT WORKYEARS

Generic Chemical Review	294.4	319.3	314.3	314.3
TOTAL PERMANENT WORKYEARS	294.4	319.3	314.3	314.3

TOTAL WORKYEARS

Generic Chemical Review	306.9	319.3	314.3	314.3
TOTAL WORKYEARS	306.9	319.3	314.3	314.3



PESTICIDES

Generic Chemical Review

Budget Request

The Agency requests a total of \$45,845,300 supported by 314.3 total workyears for 1990, a decrease of \$28,487,200 from 1989. Of the request, \$18,940,600 will be for the Salaries and Expenses appropriation, and \$26,904,700 will be for the Abatement, Control and Compliance appropriation, an increase of \$2,593,900 and a decrease of \$31,081,100 respectively, with no change in total workyears.

GENERIC CHEMICAL REVIEW

1990 Program Request

The Agency requests a total of \$45,845,300 supported by 314.3 total workyears for this program, of which \$18,940,600 will be for the Salaries and Expenses appropriation, and \$26,904,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$2,593,900 in the Salaries and Expenses appropriation, a decrease of \$31,081,100 in the Abatement, Control, and Compliance appropriation and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Abatement, Control, and Compliance reflects a reduction in need for transportation, storage and disposal funding of remaining stocks of cancelled and suspended pesticides due to significant progress that will be achieved using funds appropriated in 1989 for this purpose.

There will be a new initiative in 1990 to build Regional and state capabilities in the important areas of protecting ground water, workers occupationally exposed to pesticides, and endangered species. The Generic Chemical Review program contains resources for the initiative's Headquarters national program development and liaison function.

Of the resources requested in 1990 for the Abatement, Control and Compliance appropriation, \$15,000,000 will be earmarked for transportation, storage and disposal of cancelled and suspended pesticides. These funds will allow further progress toward final disposal of 2,4,5-T/Silvex and any remaining dinoseb stocks. The Agency's responsibility to indemnify holders and bear the costs of disposal of cancelled and suspended pesticides will continue in 1990 for chemicals which were suspended and cancelled prior to the 1988 FIFRA amendments.

The program will continue the emphasis, begun in 1988, on issuance of Second Round Reviews (SRR's, formerly Final Regulatory Standards and Tolerance Reassessments) with reregistration closure. SRR's are the product of the updating of Registration Standards when all of the data required by the Data Call-In and Registration Standards programs are available and reviewed. Ten SRR's with reregistration closure will be conducted.

The Agency also expects to establish 15 initial Registration Standards in 1990, the same number as in 1989. Initial standards will be developed for

potentially high risk pesticides to provide for the development of substantially complete data bases for SRR review in future years. The number of completed SRR's, initial Standards and Special Reviews, may vary according to the priority of candidates for each type of review.

The Agency will continue to address the complex issues raised by the National Academy of Sciences (NAS) 1987 study of the Delaney Clause of the Federal Food, Drug, and Cosmetic Act (FFDCA). These issues have potentially far-reaching effects on the reregistration program.

The Agency will continue efforts to assess the potential for agricultural pesticides to contaminate the nation's supply of underground drinking water, including both the degree and likely extent of contamination. In addition, ground-water contamination concerns will be considered in reregistration and registration reviews. The National Survey of Pesticides in Drinking Water Wells will be completed in 1990, and the results will be used to refine the Agency's ground-water strategy.

Review of studies called in during prior years, including studies of ground-water contamination and chronic health effects, will be continued. Priority will be given to those studies which meet criteria indicating potential adverse effects. Remaining studies will be reviewed in the course of SRR's.

Resources requested for 1990 will enable the completion of 13 Special Review decisions. Special Reviews will be initiated according to criteria which reflect actual risk, and will emphasize ground-water considerations, accelerated decision-making, and increased use of restricted use classifications to control risk. The number of Special Reviews may vary since the initiation of Special Reviews is responsive to the identification of potential risks during the development of Registration Standards and the receipt of studies from Registration Standards and Data Call-In indicating potential adverse effects. The outcomes of these activities cannot be predetermined. If fewer or additional Special Reviews are required, resources may be shifted between Special Reviews and Registration Standards or SRR's. Administrative hearings will be held, as required, on regulatory action proposed by the Agency in the Special Review process.

The results of lab audits will be employed in the Special Review and Registration processes to assure the validity of health and environmental effects data used to support pesticide registration actions. Monitoring of selected pesticide exposure problems and accidental exposure incidents will be continued in cooperation with various Federal, state and other institutional sources. Integrated Pest Management (IPM) will be considered in Special Reviews, on a case-by-case basis, among the full range of potential risk-reduction measures examined.

1989 Program

In 1989, the Agency is allocating a total of \$74,332,500 supported by 314.3 total workyears for this program, of which \$16,346,700 is from the Salaries and Expenses appropriation and \$57,985,800 is from the Abatement, Control and Compliance appropriation.

Data Call-In (DCI) resources are focusing on call-ins which are low in cost and have a high potential to encourage registrants to opt for voluntary cancellation to avoid the cost of providing required data, thereby minimizing

the expenditure of Agency resources on chemicals destined for voluntary cancellation. The DCI program continues to improve the product chemistry data base necessary to identify inerts, impurities, and contaminants of toxicological concern in pesticide products.

The reregistration program is continuing a shift to the production of SRR's, including label and formulation changes on end-use products also known as "closure." This shift will permit EPA to address complete data bases, and will result in greater environmental payoffs and greater real world impacts from the reregistration program. Ten SRR's with closure are planned for 1989.

The Agency expects to establish 15 Registration Standards in 1989. Initial standards continue to be developed for potentially high risk pesticides, and provide for the continued development of substantially complete data bases for SRR review in future years. Registration Standards follow-up is being enhanced to obtain more complete payoff both from Registration Standards already developed and from other actions such as the call-in of toxicology and exposure information for anti-microbials.

The Regions are continuing an effort begun in 1988 to develop an expert Regional capability to support pesticide regulatory activities, including a strong focus on ground-water concerns, other geographic-specific environmental concerns, and Regional monitoring.

Resources continue to be directed to respond to the Delaney Clause issues highlighted in the National Academy of Sciences report, including a likely requirement to reassess tolerances for the highest risk and most widely used pesticides. Thirteen Special Reviews are projected for 1989. Automated decision support systems, for assessing dietary exposure, are being enhanced to support this work.

In accordance with the shift in the focus of ground-water initiatives to the Regions and the states, Headquarters personnel are being utilized to provide ground-water technical assistance to the Regions. In addition, the Agency is continuing efforts to assess the potential for agricultural pesticides to contaminate the nation's supply of underground drinking water, including both the likely extent and degree of contamination.

In 1989 the focus of disposal efforts is on nearing completion of the disposal of dinoseb.

1988 Accomplishments

In 1988, the Agency obligated a total of \$34,774,700 supported by 306.9 total workyears for this program, of which \$16,442,800 was from the Salaries and Expenses appropriation and \$18,331,900 was from the Abatement, Control and Compliance appropriation.

In 1988, nine SRR's were conducted, 16 initial Registration Standards were established, and 14 Special Review decisions were reached. New review procedures provided for early involvement of all appropriate EPA offices in the development of regulatory decisions, including Special Reviews.

In 1988, the Data Call-In program continued to develop improvements in the product chemistry data base necessary to determine inerts, impurities, and contaminants which are of toxicological concern in pesticide products. Laboratory data audits were conducted by the Agency or cooperatively with other

agencies to ensure the development of high-quality test data on the health and environmental effects of pesticides.

The Pesticides disposal effort increased considerably in 1988 due to the requirement of the Agency to accept stocks of suspended and cancelled chemicals (ethylene dibromide (EDB), 2,4,5-T/Silvex, and dinoseb) for storage and disposal. Most of the national stocks of EDB were disposed of in 1988 and approximately half of the 2,4,5-T/Silvex stocks were stored by the Agency.

PESTICIDES
Pesticides Program Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Pesticides Program Implementation						
Salaries & Expenses	\$622.1	\$910.2	\$960.9	\$1,966.1	\$1,005.2	
TOTAL	\$622.1	\$910.2	\$960.9	\$1,966.1	\$1,005.2	
Pesticides Program Implementation - Grants						
Abatement Control and Compliance	\$4,015.2	\$4,000.0	\$4,000.0	\$12,500.0	\$8,500.0	
TOTAL	\$4,015.2	\$4,000.0	\$4,000.0	\$12,500.0	\$8,500.0	
TOTAL:						
Salaries & Expenses	\$622.1	\$910.2	\$960.9	\$1,966.1	\$1,005.2	
Abatement Control and Compliance	\$4,015.2	\$4,000.0	\$4,000.0	\$12,500.0	\$8,500.0	
Pesticides Program Implementation	TOTAL	\$4,637.3	\$4,910.2	\$4,960.9	\$14,466.1	\$9,505.2
PERMANENT WORKYEARS -----						
Pesticides Program Implementation	13.5	20.3	20.3	44.4	24.1	
TOTAL PERMANENT WORKYEARS	13.5	20.3	20.3	44.4	24.1	
TOTAL WORKYEARS -----						
Pesticides Program Implementation	15.0	22.4	22.2	44.4	22.2	
TOTAL WORKYEARS	15.0	22.4	22.2	44.4	22.2	



PESTICIDES

Pesticides Program Implementation

Budget Request

The Agency requests a total of \$14,466,100 supported by 44.4 total workyears for 1990, an increase of \$9,505,200 and 22.2 total workyears from 1989. Of the request, \$1,966,100 will be for the Salaries and Expenses appropriation and \$12,500,000 will be for the Abatement, Control, and Compliance appropriation, increases of \$1,005,200 and \$8,500,000 respectively.

PESTICIDES PROGRAM IMPLEMENTATION

1990 Program Request

The Agency requests a total of \$1,966,100 supported by 44.4 total workyears for this program (formerly the Certification and Training program), all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$1,005,200 and 22.2 total workyears. The increase reflects a new initiative to increase Regional and state capabilities in the areas of protecting ground water, workers occupationally exposed to pesticides, and endangered species.

Increasing concerns about the pesticide threat to ground water, endangered species, and workers occupationally exposed to pesticides have necessitated a fundamental shift in the pesticide program from its traditional, primary focus on national licensing activities to a more balanced Headquarters/field effort. Local variations in pesticide programs and in these problem areas require a strong Federal and state presence. The requested resources will address these problem areas through the development and dissemination of training materials, management of special projects, public and private sector initiatives, national and joint workshops, and oversight and coordination of state efforts. The program will also expand its support to the development and implementation of state plans, negotiation and monitoring of state grants, and provision of technical assistance and outreach programs to the states and the public.

In 1990, the program will also continue to implement the EPA/State FIFRA Issues Research and Evaluation Group (EPA/SFIREG) recommendations with emphasis on revising and implementing certification regulations. Initiatives to implement Federally administered state certification and training (C&T) programs will be completed. Headquarters staff will direct the development of training materials on the new training issues of ground water, endangered species, and worker safety. Updated Integrated Pest Management materials will be developed in cooperation with the United States Department of Agriculture (USDA).

In 1990, emphasis will be placed on overseeing the process of remedying deficiencies in state pesticides management plans identified through Regional evaluations and negotiations. The program will also implement rules governing the sale of restricted use pesticides to non-certified persons. Regional staff, in conjunction with USDA, will conduct in-depth evaluations of State Cooperative Extension Service (CES) training programs for applicator certification and training, and work with USDA/State Extension Service and the

states to strengthen existing programs. Regional staff will also continue to provide technical expertise on specific issues relating to the use and application of pesticides.

1989 Program

In 1989, the Agency is allocating a total of \$960,900 supported by 22.2 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1989 the major focus is to implement the recommendations of the EPA/SFIREG Certification and Training Task Force to upgrade C&T materials. EPA and USDA are jointly reviewing 30 training programs for private applicators which will be expanded to commercial applicators in 1991. One tribal plan is in place and five are under review.

EPA Regional pesticide experts are providing technical expertise on pesticide issues such as certification and training, application techniques, toxicity, pesticide disposal, restricted use pesticides, and other topical pesticide issues.

1988 Accomplishments

In 1988, the Agency obligated a total of \$622,100 supported by 15.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1988, special project state grants were funded to develop, evaluate and update training materials. As recommended by EPA/SFIREG, this process will continue until all materials have been evaluated. Twenty four joint USDA/EPA reviews of private applicator training programs were completed. In 1988, follow-up was conducted to ensure that all recommendations were implemented.

PESTICIDES PROGRAM IMPLEMENTATION GRANTS

1990 Program Request

The Agency requests a total of \$12,500,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$8,500,000. The increase reflects a new initiative to increase Regional and state capabilities beyond their traditional focus on certification and training of pesticide applicators to deal with the problems of protecting ground water, workers, and endangered species from pesticides. These grants were formerly known as Certification and Training Grants.

Increasing concerns about the pesticide threat to ground water, endangered species, and workers and applicators have necessitated a fundamental shift in the pesticide program from a primarily licensing activity to a more balanced, Headquarters/field effort. Local variations in pesticide programs and in these problem areas require a strong Federal and state presence. State plans are needed to manage each of these problem areas but states are reluctant to begin such significant programs without evidence of additional Federal support. The requested increase will be used to develop and implement site-specific state regulatory, outreach and management plans coordinated among necessary state agencies (e.g., agriculture, health, water, and environment).

Funding for certification agreements will help to support 53 applicator certification programs in participating states and territories and in the Federally conducted programs in Colorado and Nebraska. EPA will continue its interagency agreement with USDA to provide training to pesticide applicators by working through State Cooperative Extension Services. A grant to the USDA/State Extension Services will help to support the applicator training programs.

Regional educational packages and special initiatives to meet national and Regional emerging pesticide issues and critical information gaps will be developed. Resources will also be used to develop training programs for non-agricultural applicators to whom training expertise is not currently available.

1989 Program

In 1989, the Agency is allocating a total of \$4,000,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

This funding is being used to help support 53 delegated certification programs, 53 delegated training programs, and the Federally conducted programs in Colorado and Nebraska. The states are updating their programs to address newly restricted pesticides, changes in technology and new information on the use and effects of pesticides. The program will support seven to nine C&T special initiatives to address Regional issues and non-agricultural training needs (including proper use of restricted use pesticides in lawn care and within structures, and relating to ground water and disposal procedures). A steering committee has been established to identify and make accessible appropriate private sector resources that are currently not being used in C&T.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,015,200 for this program, all of which was from the Abatement, Control and Compliance appropriation. EPA helped to support 53 applicator certification programs and 53 training programs and operated programs in Colorado and Nebraska.



Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>PESTICIDES</u>	6-1
ENFORCEMENT	
Pesticides Enforcement.	6-34
Pesticides Enforcement	6-35
Pesticides Enforcement Grants.	6-36



PESTICIDES
Pesticides Enforcement

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Pesticides Enforcement					
Salaries & Expenses	\$4,505.4	\$4,701.8	\$4,887.8	\$5,459.8	\$572.0
Abatement Control and Compliance	\$108.2	\$105.0	\$104.5	\$104.5	
TOTAL	\$4,613.6	\$4,806.8	\$4,992.3	\$5,564.3	\$572.0

Pesticides Enforcement Grants					
Abatement Control and Compliance	\$8,936.3	\$8,803.4	\$8,803.4	\$12,803.4	\$4,000.0
TOTAL	\$8,936.3	\$8,803.4	\$8,803.4	\$12,803.4	\$4,000.0

TOTAL:					
Salaries & Expenses	\$4,505.4	\$4,701.8	\$4,887.8	\$5,459.8	\$572.0
Abatement Control and Compliance	\$9,044.5	\$8,908.4	\$8,907.9	\$12,907.9	\$4,000.0

Pesticides Enforcement TOTAL	\$13,549.9	\$13,610.2	\$13,795.7	\$18,367.7	\$4,572.0
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PERMANENT WORKYEARS

Pesticides Enforcement	97.8	99.7	104.4	117.3	12.9
TOTAL PERMANENT WORKYEARS	97.8	99.7	104.4	117.3	12.9

TOTAL WORKYEARS

Pesticides Enforcement	106.4	104.6	109.3	117.3	8.0
TOTAL WORKYEARS	106.4	104.6	109.3	117.3	8.0



PESTICIDES

Pesticides Enforcement

Budget Request

The Agency requests a total of \$18,367,700 supported by 117.3 total workyears for 1990, an increase of \$4,572,000 and 8.0 in total workyears from 1989. Of the request, \$5,459,800 will be for the Salaries and Expenses appropriation and \$12,907,900 will be for the Abatement, Control, and Compliance appropriation, increases of \$572,000 and \$4,000,000, respectively.

PESTICIDES ENFORCEMENT

1990 Program Request

The Agency requests a total of \$5,564,300 supported by 117.3 total workyears for this program, of which \$5,459,800 will be for the Salaries and Expenses appropriation and \$104,500 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$572,000 for the Salaries and Expenses appropriation, no change in the Abatement, Control, and Compliance appropriation, and an increase of 8.0 total workyears. The increase in Salaries and Expenses and workyears reflects the expanded development of worker protection enforcement requirements in Regional offices.

In 1990, the Pesticides Enforcement program will again concentrate on state delegation, under cooperative enforcement agreements, in the nationwide pesticide compliance monitoring program. The Agency will emphasize achieving compliance with rules governing pesticide use with less emphasis on product surveillance in the marketplace. Tracking and enforcement of pesticide registration requirements will be a major component of the pesticide enforcement program. The states will be responsible for enforcing notices of intent to suspend product registrations issued under this compliance program. The Federal role at the Regional level will include oversight and management of state cooperative agreement programs.

An increase of 8.0 total workyears will allow Regional offices to develop Federal compliance activities in support of the emerging new worker protection regulations. With increased resources, the Regions will be able to train states as to the enforcement provisions and response policies to the final worker protection rule, supplement and coordinate state compliance activities focused on worker protection, conduct Regional worker protection-related inspections, take enforcement actions in this area and develop cases to support worker protection enforcement actions. The Regions will continue to oversee the development of state enforcement response policies under sections 26 and 27, and track and follow up on compliance with section 3(c)(2)(B) cancellations.

Headquarters will provide overall program guidance and management, will assist in developing new and revised regulations, and develop compliance monitoring strategies and enforcement response policies for all such rules. Headquarters staff will also provide guidance and general oversight of the Federal/state cooperative enforcement agreement program, and technical and

analytical support for Regional activities. Both Headquarters and the Regional offices are responsible for quality assurance and quality control of all enforcement data collected by EPA.

1989 Program

In 1989, the Agency is allocating a total of \$4,992,300 supported by 109.3 total workyears for this program, of which \$4,887,800 is from the Salaries and Expenses appropriation and \$104,500 is from the Abatement, Control and Compliance appropriation.

In 1989, the Agency is continuing to emphasize state participation in pesticide compliance monitoring and enforcement activities through cooperative enforcement agreements. There are 55 cooperative enforcement agreements with states and territories and eight additional agreements with Indian Tribes and tribal organizations. Federal compliance monitoring activities continue in states without cooperative agreements. Other Federal responsibilities include import and export surveillance, technical and compliance assistance to the states and the regulated community, and operation of a computer system maintaining pesticide producer establishment and production records and other related enforcement data. Tracking and enforcement of pesticide registration requirements will continue to be a vital component of the Federal compliance program.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,613,600 supported by 106.4 total workyears for this program, of which \$4,505,400 was from the Salaries and Expenses appropriation and \$108,200 was from the Abatement, Control and Compliance appropriation.

In 1988, the Federal compliance monitoring program accomplished the following: 125 inspections of pesticide producing establishments, 400 dealer record inspections, 200 use and re-entry inspections, 300 import inspections at ports of entry, 250 marketplace investigations, and 65 laboratory inspections.

A total of 55 cooperative enforcement agreements were in place with states and territories, plus another eight agreements with Indian Tribes and tribal organizations, in 1988. As part of the cooperative agreement program, the Agency supplemented training for state inspectors, chemists and case development staff.

In 1988, the final phase of the transfer of functions from the Office of Pesticide Programs relating to the monitoring and enforcement of pesticide data registration requirements was concluded.

PESTICIDES ENFORCEMENT GRANTS

1990 Program Request

The Agency requests a total of \$12,803,400 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$4,000,000. This increase will allow states to ensure compliance with the new worker protection regulations, expansion of product cancellation/suspension enforcement activities at user, dealer, and producer levels, enforcement of new labeling requirements produced by the

reregistration process, and adoption of new technology to improve pesticide use monitoring. State laboratory analytical equipment currently supporting the cooperative agreement program and enforcement case development is becoming increasingly outdated and needs to be updated and replaced.

The Agency will continue cooperative enforcement agreements with 55 participating states and territories, and eight agreements with Indian Tribes and tribal organizations. The cooperative enforcement agreement program continues to be the primary means for ensuring public and environmental safety from hazardous pesticides by enforcing the requirements of FIFRA.

States will ensure coordination with all agencies responsible for the safety of workers occupationally exposed to pesticides, notify prospective constituents of the provisions of the final rule, and conduct worker protection-related inspections, incident investigations and legal action. The inspections will ensure that product labeling includes the new worker protection statements and will focus on new use-related requirements under the revised regulations.

In addition to use, dealer record and producer establishment inspections, states will continue to conduct pesticide marketplace, applicator license and record inspections, and worker reentry inspections.

1989 Program

In 1989, the Agency is allocating a total of \$8,803,400 for this program, all of which is from the Abatement, Control and Compliance appropriation.

In 1989, the Agency is continuing 55 cooperative enforcement agreements with states and territories, and eight additional agreements with Indian Tribes and tribal organizations. These agreements emphasize user compliance with label directions for proper use and application, as well as manufacturer adherence to product formulation requirements under FIFRA. Inspections also address applicator licenses and records, producer establishments, marketplaces, and pesticide dealers.

1988 Accomplishments

In 1988, the Agency obligated a total of \$8,936,300 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Under the terms of their cooperative enforcement agreements, 55 participating states and territories, plus eight Indian Tribes and tribal organizations, conducted 17,800 use, reentry and experimental use inspections, 1,945 inspections of pesticide-producing establishments, 9,992 applicator license and record inspections, 7,608 dealer record inspections, and 4,360 marketplace investigations.



7. Radiation

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>RADIATION</u>	7-1
RESEARCH AND DEVELOPMENT	
Radiation Research.	7-6
Monitoring Systems and Quality Assurance	7-9
Environmental Engineering and Technology	7-10
ABATEMENT AND CONTROL	
Radiation Criteria, Standards and Guidelines.	7-12
Radiation Program Implementation.	7-16
Radiation Environmental Impact Assessment	7-19
Radon Action Program.	7-22
Radon Action Program Implementation	7-26





RADIATION

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$10,014.0	\$11,225.7	\$11,343.3	\$12,037.9	694.6
Abatement Control and Compliance	\$8,140.5	\$9,565.6	\$9,423.5	\$17,223.5	\$7,800.0
Research & Development	\$1,509.5	\$2,290.7	\$2,258.2	\$2,561.5	\$303.3
TOTAL, Radiation	\$19,664.0	\$23,082.0	\$23,025.0	\$31,822.9	\$8,797.9

PERMANENT WORKYEARS	158.3	198.5	196.8	200.2	3.4
TOTAL WORKYEARS	170.9	200.9	199.2	200.2	1.0
OUTLAYS	\$16,266.9	\$20,192.7	\$20,142.3	\$30,660.8	\$10,518.5

AUTHORIZATION LEVELS

The "Radon Pollution Control Act of 1988" authorizes \$14 million in 1989, 1990, and 1991 plus other general authorizations for radon activities. All other authorization except for Research and Development is by virtue of the Appropriation Act. The Environmental Research, Development and Demonstration Act expired September 30, 1981. Reauthorization is pending.

RADIATION

OVERVIEW AND STRATEGY

EPA's mandate to protect the public health and environment from adverse effects of radiation exposure is derived from several statutes: the Atomic Energy Act, which provides authority for Federal guidance and general environmental standards (transferred to EPA by Reorganization Plan #3 of 1970); the Clean Air Act Amendments of 1977, which provide authority to regulate radioactive air pollutants; the Resource Conservation and Recovery Act and the Uranium Mill Tailings Radiation Control Act, which charge EPA with providing standards for protection from waste materials with radioactive content; the Indoor Radon Abatement Act (IRAA) of 1988 and the Superfund Amendments and Reauthorization Act (SARA), which provide authority for a nationwide program to address indoor radon. Other authorities are contained in the Nuclear Waste Policy Act; the Federal Water Pollution Control Act; the Marine Protection, Research, and Sanctuaries Act; the Safe Drinking Water Act; the Public Health Service Act; and the National Environmental Policy Act.

The statutes prescribe EPA's role in assessing the environment, assessing technology, setting standards, and conducting research. In some cases, enforcement responsibilities are vested in other agencies, notably the Nuclear Regulatory Commission (NRC). In these instances, EPA performs some oversight functions to ensure that established standards and guidance are followed.

EPA's Radiation Program aims to accomplish four major objectives: (1) reduce health effects and environmental impacts; (2) assess emerging radiation problems; (3) maintain a capability to respond to emergencies; and (4) carry out supporting research.

Reduce adverse health effects and environmental impact from radiation exposure through a program of standards and guides

Under section 112 of the Clean Air Act, EPA assesses and, when appropriate, regulates source categories that emit airborne radionuclides. If regulations are appropriate, the Agency promulgates and implements National Emission Standards for Hazardous Air Pollutants (NESHAPs). In 1990 the Agency will focus on implementing final NESHAPs rules issued in 1989. EPA will provide implementation guidance to states and Regions, and will work with states to transfer NESHAPs implementation responsibility to them.

EPA evaluates and regulates various classes of radioactive wastes and disposal options through a program designed to ensure that waste is disposed in a manner which is environmentally sound and limits exposures. As part of the effort to address the problem of radioactive waste disposal, EPA will work towards promulgating the final low-level radioactive waste standard and will provide implementation assistance to the Regions and states. In 1990 the Agency will also continue developing a high-level waste standard, which will include a background information document and a regulatory impact assessment.

In 1990 the Agency will continue its radiofrequency program at a level sufficient to maintain measurement capabilities, conduct limited field studies, and disseminate information to the public.

Assess and quantify existing and emerging radiation problems and their potential impact

Along with increasing use of radioactive materials comes more widespread knowledge about radiation exposure and the potential for contamination of environmental pathways. As a consequence, requests for assistance in site assessments and radiochemical analyses of environmental samples have increased substantially, particularly from the Federal sector.

One of the most significant radiation problems identified in recent years is indoor radon. Radon, a naturally occurring radioactive gas, is estimated to cause between 5,000 and 20,000 lung cancer fatalities annually. In response to elevated indoor radon levels found in areas such as the Reading Prong region of Pennsylvania, New Jersey, and New York; a similar area in North Dakota and Minnesota; and other parts of the country, the Congress enacted the Indoor Radon Abatement Act (IRAA) in 1988. Included in the Act is a mandate to set a long-term national goal of reducing indoor radon concentrations to ambient levels.

The Radon Action Program, initiated by EPA in 1986, will continue to be one of the Agency's highest priorities in 1990. The program consists of four objectives: assessing the problem, carrying out mitigation and prevention research and applications, developing state and private sector capability, and developing and disseminating public information and education materials. The activities, which incorporate functions mandated under IRRA, the Superfund Amendments and Reauthorization Act (SARA), and other statutory authority are parts of an integrated program that relies on a voluntary partnership between Federal, state, and private sectors. Specific activities include a national survey of radon in residences, more intensive state surveys, and preparation for national surveys of radon in schools and workplaces.

In 1990 EPA will begin a three-year Radon State Grant program to help states develop and implement programs to assess and mitigate radon. In addition, the Agency will continue the House Evaluation Program (HEP) to provide the opportunity for state personnel and contractors to learn and practice the latest techniques in mitigating significant radon problems in residences. EPA will use regional training centers to help build state and local capabilities in radon measurement, assessment, and mitigation. The Agency will also continue its National Radon Measurement Proficiency program to provide a vehicle for the public to gain information on the capability of private measurement firms. Beginning in 1990, the Agency will also provide information on mitigation contractors through the National Radon Mitigation Contractor Proficiency program.

Maintain a capability to respond to emergencies and to aid development and testing of state, local, and Federal plans for emergency response

The Agency maintains the Environmental Radiation Ambient Monitoring System (ERAMS) to provide a mechanism for tracking and measuring large atmospheric

releases of radioactive materials across the country. The system also provides continuous information on radiation levels in environmental pathways. The Agency maintains two emergency response teams in a state of readiness so that they can be flown to sites where significant radiation releases have occurred or appear imminent. In 1990 EPA will seek to extend the number of staff trained to respond to radiation emergencies. The Agency will also participate in full field exercises scheduled by the Federal Emergency Management Agency (FEMA). In addition, the Agency will continue developing a protective action guide for ingestion pathways and will initiate development of criteria for accident contamination recovery.

Conduct supporting research

The EPA Office of Research and Development (ORD) performs two key functions in support of the Agency's radiation goals. First, ORD provides data needed to support the Agency's Radon Action Program. In 1990 ORD will continue to demonstrate radon mitigation techniques in a variety of residential structures, in coordination with the Agency's HEP, and will use the results to publish updated handbooks and technical manuals that detail mitigation techniques for homeowners and builders. ORD will also expand its current mitigation demonstration program to address schools with elevated levels of radon.

Second, to assist laboratories that measure radionuclide emissions, ORD provides monitoring and quality assurance support, including inter-laboratory comparison studies. Under an interagency agreement with the Department of Energy, ORD also provides support in the form of off-site monitoring around nuclear test sites. Support includes long-term hydrological monitoring, a human surveillance investigation program, and maintenance of a radiation data base.



RADIATION

<u>PROGRAM ACTIVITIES</u>	<u>ACTUAL</u> <u>1988</u>	<u>CURRENT</u> <u>ESTIMATE</u> <u>1989</u>	<u>ESTIMATE</u> <u>1990</u>	<u>INCREASE (+)</u> <u>DECREASE (-)</u> <u>1990 vs 1989</u>
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Cumulative Outputs

Regulations:

Proposals.....	--	14	1	-13
Promulgations.....	--	14	--	-14

Guides:

Proposals.....	2	--	1	+1
Final.....	--	2	--	-2

Key for Cumulative Outputs:

1988: 1 plume protective action guide (PAG) proposed
 1 relocation PAG proposed

1989: 13 NESHAPs proposed
 1 Low-level waste standard proposed

 1 plume PAG final guide
 1 relocation PAG final guide

1990: 1 high-level waste standard proposed
 1 PAG proposed (undetermined)



Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>RADIATION</u>	7-1
RESEARCH AND DEVELOPMENT	
Radiation Research.	7-6
Monitoring Systems and Quality Assurance	7-9
Environmental Engineering and Technology	7-10



RADIATION
Radiation Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Monitoring Systems & Quality Assurance - Radiation					
Salaries & Expenses	\$153.1	\$167.9	\$167.9	\$292.3	\$124.4
TOTAL	\$153.1	\$167.9	\$167.9	\$292.3	\$124.4
Environmental Engineering and Technology - Radiation					
Salaries & Expenses	\$1,046.4	\$1,165.2	\$1,160.0	\$1,386.4	\$226.4
Research & Development	\$1,509.5	\$2,290.7	\$2,258.2	\$2,561.5	\$303.3
TOTAL	\$2,555.9	\$3,455.9	\$3,418.2	\$3,947.9	\$529.7
TOTAL:					
Salaries & Expenses	\$1,199.5	\$1,333.1	\$1,327.9	\$1,678.7	\$350.8
Research & Development	\$1,509.5	\$2,290.7	\$2,258.2	\$2,561.5	\$303.3
Radiation Research TOTAL	\$2,709.0	\$3,623.8	\$3,586.1	\$4,240.2	\$654.1
PERMANENT WORKYEARS -----					
Monitoring Systems & Quality Assurance - Radiation	3.1	4.7	4.7	4.7	
Environmental Engineering and Technology - Radiation	16.3	18.0	17.9	17.9	
TOTAL PERMANENT WORKYEARS	19.4	22.7	22.6	22.6	

RADIATION
Radiation Research

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Monitoring Systems &
Quality Assurance -
Radiation

4.0	4.7	4.7	4.7
-----	-----	-----	-----

Environmental
Engineering and
Technology - Radiation

16.7	18.0	17.9	17.9
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TOTAL WORKYEARS

20.7	22.7	22.6	22.6
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RADIATION

Radiation Research

Principal Outputs by Objective

Objective 1: Provide Monitoring and Quality Assurance Support to Federal, State, and Local Laboratories

- 1990: o Annual report for calendar year 1989 on off-site surveillance around the Nevada Test Site (Monitoring)
- o Annual report on laboratory radionuclide intercomparison studies (Monitoring)
- 1989: o Annual report for calendar year 1988 on off-site surveillance around the Nevada Test Site (Monitoring)
- 1988: o Annual report for calendar year 1987 on off-site surveillance around the Nevada Test Site (Monitoring)
- o Annual report on laboratory radionuclide intercomparison studies (Monitoring)

Objective 2: Provide Scientific Data to Support the Radon Action Program

- 1990: o Second annual national symposium on Radon and Radon Reduction Technology (Engineering)
- o Updated guidance to mitigation professionals, do-it-yourself homeowners, and state officials on radon mitigation techniques for existing homes (Engineering)
- o Report on initial school mitigation studies (Engineering)
- 1989: o Update the guidance manual entitled "Radon Resistant Residential New Construction" (Engineering)
- 1988: o Manuals on radon reduction techniques for new and existing homes (Engineering)
- o First annual Symposium on Radon and Radon Reduction Technology (Engineering)



RADIATION

Radiation Research

Budget Request

The Agency requests a total of \$4,240,200 supported by 22.6 total workyears for 1990, an increase of \$654,100 from 1989 and no change in total workyears. Of the request, \$1,678,700 will be for the Salaries and Expenses appropriation and \$2,561,500 will be for the Research and Development appropriation, an increase of \$350,800 and \$303,300 respectively.

Program Objectives

This research program provides the Office of Radiation Programs (ORP) and other EPA, Federal, Regional, state and local officials with the scientific data, methods, assessments and mitigative techniques necessary to determine and control public exposure to radon and other radioactive materials in the environment. The following objectives support these goals:

Objective 1. Provide Monitoring and Quality Assurance Support to Federal, State, and Local Laboratories. This program provides comprehensive radiological monitoring and surveillance services to meet specific Department of Energy (DOE) requirements for its nuclear testing programs, especially at the Nevada Test Site. This work is conducted under a reimbursable arrangement with DOE. EPA also conducts a radiochemical analytical quality assurance program which supports Federal, state, and local laboratories making radioactivity measurements.

Objective 2. Provide Scientific Data to Support the Radon Action Plan. Under this program, the Office of Research and Development (ORD) conducts research on, demonstrates and evaluates techniques to prevent and mitigate exposure to radon gas in existing homes, homes under construction, and school buildings.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$292,300 supported by 4.7 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$124,400 for increased personnel and support costs, and no change in total workyears.

Provide Monitoring and Quality Assurance Support to Federal, State, and Local Laboratories. This research program will provide the data needed by policy-makers to make decisions regarding the control of public exposure to radioactive materials. Monitoring support for DOE at the Nevada Test Site and other test locations will be provided. This support consists of a radiation safety monitoring program, a long-term hydrological monitoring program, a human

surveillance investigation program, and maintenance of the radiation data base. Technical expertise and guidance will be provided to Regional, state, and contractor laboratories for radiochemical analyses of environmental samples. Interlaboratory comparison studies will also be conducted to provide data on the precision and accuracy of radioactivity measurements in milk, drinking water, and air.

1989 Program

In 1989, the Agency is allocating a total of \$167,900 supported by 4.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. Monitoring support including routine monitoring in off-site areas and support during nuclear tests is being provided to the Department of Energy at the Nevada Test Site and other installations. In addition, the Agency is conducting a quality assurance program for Regional, state, and contractor laboratories involved in the radiochemical analyses of radionuclides in environmental samples.

1988 Accomplishments

In 1988, the Agency obligated a total of \$153,100 supported by 4.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation. Annual reports on the laboratory radionuclide intercomparison studies and the off-site surveillance program were published.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$3,947,900 supported by 17.9 total workyears for this program, of which \$1,386,400 will be for the Salaries and Expenses appropriation and \$2,561,500 will be for the Research and Development appropriation. This represents increases of \$226,400 and \$303,300, respectively, and no change in total workyears. The increase in funding will be used for school mitigation research and for increased personnel and support costs.

Provide Scientific Data to Support the Radon Action Plan. Exposure to indoor radon gas poses a significant risk to public health. In order to address the risks associated with radon and to respond to growing public concern, the "Radon Gas and Indoor Air quality Research Act of 1986" (SARA Title IV) and the "Radon Pollution Control Act of 1988" were enacted by Congress. These acts authorize EPA to conduct a variety of applied research on indoor radon including demonstrations of techniques to reduce exposure. The 1990 radon research program will carry out this responsibility by demonstrating and evaluating mitigation techniques in existing homes, evaluating preventive measures for homes under construction, and evaluating mitigation techniques for school buildings.

Increased emphasis will be placed on assessing whether radon mitigation techniques presently used in houses are effective in schools. Specifically, the Agency will examine the structural, architectural, and ventilation differences between homes and schools to determine if the unique

characteristics of school buildings alter the effectiveness of previously examined mitigation techniques. The results from the school mitigation program will be provided to state agencies and local school districts.

1989 Program

In 1989, the Agency is allocating a total of \$3,418,200 supported by 17.9 total workyears for this program, of which \$1,160,000 is from the Salaries and Expenses appropriation and \$2,258,200 is from the Research and Development appropriation. Radon reduction techniques are being demonstrated and tested in existing houses and preventive measures are being evaluated for homes under construction. Studies are also being conducted in the laboratory to test several mitigation techniques. The research program is demonstrating these techniques for a representative matrix of homes with different initial radon levels and construction characteristics located in a variety of geological settings. The results of the research in new homes will be used to update the manual entitled "Radon Resistant Residential New Construction." In addition, Agency staff provide technical information to community leaders and participating homeowners at the demonstration sites.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,555,900 supported by 16.7 total workyears for this program, of which \$1,046,400 was from the Salaries and Expenses appropriation and \$1,509,500 was from the Research and Development appropriation. Demonstrations of radon mitigation techniques were conducted in both existing homes and new construction. Technical guidance documents were produced for both of these areas. The brochure "Radon Reduction Methods: A Homeowners Guide" continued to be widely reprinted and circulated throughout the nation.



Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>RADIATION</u>	7-1
ABATEMENT AND CONTROL	
Radiation Criteria, Standards and Guidelines.	7-12
Radiation Program Implementation.	7-16
Radiation Environmental Impact Assessment	7-19
Radon Action Program.	7-22
Radon Action Program Implementation	7-26



RADIATION
Radiation Criteria, Standards & Guidelines

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Radiation Criteria, Standards & Guidelines						
Salaries & Expenses	\$3,320.6	\$3,389.6	\$3,372.3	\$3,524.1	\$151.8	
Abatement Control and Compliance	\$2,960.6	\$2,035.6	\$1,994.4	\$1,794.4	-\$200.0	
TOTAL	\$6,281.2	\$5,425.2	\$5,366.7	\$5,318.5	-\$48.2	
TOTAL:						
Salaries & Expenses	\$3,320.6	\$3,389.6	\$3,372.3	\$3,524.1	\$151.8	
Abatement Control and Compliance	\$2,960.6	\$2,035.6	\$1,994.4	\$1,794.4	-\$200.0	
Radiation Criteria, Standards & Guidelines	TOTAL	\$6,281.2	\$5,425.2	\$5,366.7	\$5,318.5	-\$48.2
PERMANENT WORKYEARS -----						
Radiation Criteria, Standards & Guidelines	52.6	57.9	56.6	57.6	1.0	
TOTAL PERMANENT WORKYEARS	52.6	57.9	56.6	57.6	1.0	
TOTAL WORKYEARS -----						
Radiation Criteria, Standards & Guidelines	56.7	57.9	56.6	57.6	1.0	
TOTAL WORKYEARS	56.7	57.9	56.6	57.6	1.0	



RADIATION

Radiation Criteria, Standards, and Guidelines

Budget Request

The Agency requests a total of \$5,318,500 supported by 57.6 total workyears for 1990. Of the request, \$3,524,100 will be for the Salaries and Expenses appropriation and \$1,794,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$151,800 in the Salaries and Expenses appropriation, a decrease of \$200,000 in the Abatement, Control and Compliance appropriation, and an increase of 1.0 workyear from 1989.

RADIATION CRITERIA, STANDARDS, AND GUIDELINES

1990 Program Request

The Agency requests a total of \$5,318,500 supported by 57.6 total workyears for this program, of which \$3,524,100 will be for the Salaries and Expenses appropriation and \$1,794,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$151,800 in the Salaries and Expenses appropriation, a decrease of \$200,000 in the Abatement, Control and Compliance appropriation, and an increase of 1.0 workyear from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Abatement, Control and Compliance reflects a shift from the high-level waste program to radiofrequency activities, due to completed activities.

In 1990 EPA will continue to concentrate on three major program areas: addressing airborne radionuclides, establishing standards for radioactive waste management, and developing Federal Guidance. The airborne radionuclides effort will focus on implementing the final National Emission Standards for Hazardous Air Pollutants (NESHAPs) rules issued in 1989. The Agency will continue to pursue transfer of NESHAPs implementation responsibilities to the states and will provide guidance to those states seeking delegation of authority. Guidance on implementing the NESHAPs program will also be given to the Regions. In addition, the Agency will maintain a national data base related to the implementation program.

As part of the effort to address the problem of radioactive waste disposal, EPA will work towards promulgation of the final low-level radioactive waste standard and provide required implementation assistance to the Regions and states. The Agency will develop a site evaluation model as well as other user-friendly computer models, and will initiate a study of naturally and accelerator produced radioactive materials. EPA will also continue the development of a high-level waste standard required by a court remand, including the development of a background information document and

regulatory impact assessment.

The Agency will continue its radiofrequency efforts at a level sufficient to maintain measurement capabilities, conduct limited field studies, and disseminate information to the public. Working arrangements have been established with the Federal Communications Commission, the Department of Defense, and other agencies. Technical advice, assistance, and oversight will also be provided.

As part of its nuclear accident response efforts, EPA will continue development of a protective action guide (PAG) for ingestion pathways and will initiate development of criteria for accident contamination recovery. The Agency will conduct a training program to help ensure the uniform application of the PAGs nationwide in emergency situations.

1989 Program

In 1989 the Agency is allocating a total of \$5,366,700 supported by 56.6 total workyears for this program, of which \$3,372,300 is from the Salaries and Expenses appropriation and \$1,994,400 is from the Abatement, Control and Compliance appropriation.

In 1989 EPA is giving priority to revising the radionuclide NESHAPs in accordance with the court remand of established standards. Modifications have been made, as necessary, to respond to the court decision that limits the use of cost factors in establishing required levels. All standards that were previously promulgated have been reviewed for compliance with the court order, and source categories that were determined not to require regulation are being reexamined to determine the propriety of those decisions. In 1989 a notice of proposed rulemaking will be published, public hearings conducted, comments received and considered, and the final rule issued. Agreements with the Department of Energy and the Nuclear Regulatory Commission will determine responsibilities for implementation of the standards for facilities under their respective jurisdictions.

The notice of proposed rulemaking for land disposal of low-level radioactive waste, including naturally and accelerator produced materials, is being published following the completion of both the background information document and environmental impact assessment. Public hearings will be conducted, and comments received and considered for the final rule. Existing standards for inactive mill tailings sites under the Uranium Mill Tailings Radiation Control Act are being augmented with the promulgation of standards for ground water protection at these sites.

As part of its work toward reproposal of the high-level waste standard remanded by the court, EPA will continue development of a background information document and regulatory impact assessment. The Agency will also continue development of residual radioactivity standards and will complete a risk assessment and a sensitivity analysis of the on-site pathway code. In addition, the Agency will initiate an inventory of contaminated sites that will be completed in 1990.

An electromagnetic strategy will be finalized and a study of a radio tower will be conducted, followed by a report of findings. The Agency will issue

PAGs for plume and relocation in the event of a nuclear incident. These PAGs are being incorporated in the Manual of Protective Actions, used in Federal, state, and local emergency preparedness plans in the event of a domestic or foreign radiation incident. Work on the protective action guide for ingestion (food and water) will continue.

1988 Accomplishments

In 1988 the Agency obligated \$6,281,200 and 56.7 total workyears for this program, of which \$3,320,600 was from the Salaries and Expenses appropriation and \$2,960,600 was from the Abatement, Control and Compliance appropriation.

In support of the NESHAPs rulemaking, information was compiled for source categories, sampling was conducted at selected facilities, and site specific categories were determined. Guidance was provided to the Regions on NESHAPs implementation, inspection, and enforcement. A total of 120 requests for review, acceptance, extensions, and exemptions to the radionuclide NESHAPs standard were completed.

Proposed rules for the low-level waste standard were submitted to the Office of Management and Budget for review and comment, and testimony regarding the high-level waste standard provided to the Congress. Analysis necessary to develop environmental standards for residual radioactivity at decommissioned nuclear facilities continued. Development of standards for inactive uranium mill tailings sites, as well as development of radiofrequency guidance, proceeded. Plume and relocation PAG development was completed.



RADIATION
Radiation Program Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Radiation Program Implementation						
Salaries & Expenses	\$409.5	\$341.7	\$358.7	\$369.9	\$11.2	
TOTAL	\$409.5	\$341.7	\$358.7	\$369.9	\$11.2	
TOTAL:						
Salaries & Expenses	\$409.5	\$341.7	\$358.7	\$369.9	\$11.2	
Radiation Program Implementation	TOTAL	\$409.5	\$341.7	\$358.7	\$369.9	\$11.2
PERMANENT WORKYEARS -----						
Radiation Program Implementation	7.1	6.0	6.0	7.0	1.0	
TOTAL PERMANENT WORKYEARS	7.1	6.0	6.0	7.0	1.0	
TOTAL WORKYEARS -----						
Radiation Program Implementation	8.2	7.0	7.0	7.0		
TOTAL WORKYEARS	8.2	7.0	7.0	7.0		



RADIATION

Radiation Program Implementation

Budget Request

The Agency requests a total of \$369,900 supported by 7.0 total workyears for 1990, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$11,200 in the Salaries and Expenses appropriation and no change in total workyears from 1989.

RADIATION PROGRAM IMPLEMENTATION

1990 Program Request

The Agency requests a total of \$369,900 supported by 7.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$11,200 in the Salaries and Expenses appropriation and no change in total workyears from 1989. The increase reflects increased personnel and support costs.

In 1990 Regional Offices will participate fully in all aspects of the implementation program for sources covered by NESHAPs for airborne radionuclides from emission sources within their geographic boundaries. The testing and evaluation of state emergency response plans will continue to be an important element of Regional operations, along with review of updated plans. EPA assists states in the development of radiological emergency response plans and formally reviews these plans along with other Federal agencies under the coordination of the Federal Emergency Management Agency. Also, the Regions will remain involved with state agencies and the public in presenting and interpreting Agency information and guidance regarding radiation problems in their area.

Regional Offices will continue to participate in identification and assessment of hazardous waste sites that are contaminated with radioactivity, and will serve as coordination points for remedial action programs for sites in their Regions. This effort supports both the EPA Headquarters hazardous waste programs and the requests from the states. The Regions will continue to be the primary reviewers of environmental impact statements for radiation facilities, such as commercial nuclear power plants, uranium mines and mills, and radioactive waste disposal facilities. They will also respond to special problems involving actual or potential radiation releases or exposures.

1989 Program

In 1989 the Agency is allocating a total of \$358,700 supported by 7.0 total workyears for this program, all of which is from the Salaries and

Expenses appropriation.

In 1989 the Regional radiation program is continuing to focus on emergency preparedness and technical assistance to states. Activities include: participation in Regional Assistance Committees, testing and evaluation of emergency response plans, and review of updated state and local emergency response plans. Regional Offices are reviewing requests for construction permits, modifications to facilities, and other requirements associated with the airborne radionuclides NESHAPs. The Regional staff is also providing coordination necessary where the national program is directly involved in implementation of the radionuclide NESHAPs in areas such as waivers, exemptions, and alternate requirements. Regional programs continue to be involved in the characterization of hazardous waste sites subject to possible remedial action. This includes staff participation as on-site radiation consultants in addressing problems at sites that are on the Superfund National Priority List. The Regions are continuing as the primary reviewer of environmental impact statements for radiation facilities, such as uranium mills and mines, and radioactive waste disposal facilities.

1988 Accomplishments

In 1988 the Agency obligated a total of \$409,500 supported by 8.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1988 emergency preparedness and technical assistance to the states and other EPA Regional programs remained a central focus of the Regional radiation program. Regional Offices also reviewed requests for construction permits and requests for exemptions for facilities covered by airborne radionuclide NESHAPs. They continued to review environmental impact statements for radiation facilities, such as uranium mills and mines, and radioactive waste disposal sites. They also continued to be involved with the characterization of hazardous waste sites, and provided technical assistance and advice to the Superfund program on actual or possible remedial actions.

RADIATION
Radiation Environmental Impact Assessment

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Radiation Environmental
Impact Assessment

Salaries & Expenses	\$2,885.6	\$2,991.0	\$3,119.1	\$3,200.7	\$81.6
Abatement Control and Compliance	\$250.3	\$30.3	\$30.3	\$30.3	
TOTAL	\$3,135.9	\$3,021.3	\$3,149.4	\$3,231.0	\$81.6

TOTAL:

Salaries & Expenses	\$2,885.6	\$2,991.0	\$3,119.1	\$3,200.7	\$81.6
Abatement Control and Compliance	\$250.3	\$30.3	\$30.3	\$30.3	

Radiation Environmental Impact Assessment	TOTAL	\$3,135.9	\$3,021.3	\$3,149.4	\$3,231.0	\$81.6
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PERMANENT WORKYEARS

Radiation Environmental Impact Assessment	43.5	51.0	51.0	51.0	
TOTAL PERMANENT WORKYEARS	43.5	51.0	51.0	96.3	

TOTAL WORKYEARS

Radiation Environmental Impact Assessment	47.4	51.0	51.0	51.0	
TOTAL WORKYEARS	47.4	51.0	51.0	51.0	



RADIATION

Radiation Environmental Impact Assessment

Budget Request

The Agency requests a total of \$3,231,000 supported by 51.0 total workyears for 1990. Of the request, \$3,200,700 will be for the Salaries and Expenses appropriation and \$30,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$81,600 for the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance appropriation or in total workyears.

RADIATION ENVIRONMENTAL IMPACT ASSESSMENT

1990 Program Request

The Agency requests a total of \$3,231,000 supported by 51.0 total workyears of which \$3,200,700 will be for the Salaries and Expenses appropriation and \$30,300 will be for Abatement Control and Compliance appropriation. This represents an increase of \$81,600 for the Salaries and Expenses appropriation and no change the Abatement, Control and Compliance appropriation or in total workyears. The increase reflects increased personnel and support costs.

In 1990 EPA will continue to support development, implementation, and enforcement of standards under the Clean Air Act, the Atomic Energy Act, and other statutory authorities. This will include support for implementing NESHAPs for airborne radionuclides, and may include collecting and analyzing air samples from facilities to verify compliance with existing standards. Analysis of data obtained through field data collection from the Idaho survey will facilitate a decision on what additional steps should be taken.

EPA will continue to maintain emergency response capabilities at two field locations, and will also participate in field exercises scheduled by FEMA. In addition, EPA will extend training for nuclear accident responses to the radiation staff beyond the core group who normally participate in tests and exercises of the existing Federal emergency response plans. The 268 stations of the Environmental Radiation Ambient Monitoring System (ERAMS), which collect and analyze samples of air, precipitation, and milk to help determine ambient radiation levels, will continue in full operation.

EPA will continue to provide limited support to states, other Federal agencies, and other parts of EPA in the form of radiochemical analyses, technical assistance, and participation in the Conference of Radiation Control Program Directors. The Agency will make available reports of radiation levels in naval harbors surveyed at the request of the Navy.

1989 Program

In 1989 the Agency is allocating a total of \$3,149,400 supported by 51.0 total workyears for this program, of which \$3,119,100 is from the Salaries and Expenses appropriation and \$30,300 is from the Abatement, Control and Compliance appropriation.

In 1989 EPA is continuing laboratory and technical support for regulation and guidance development. Collection of environmental information related to the proposal of regulations for residual radioactivity at decommissioned nuclear facilities is also continuing. Environmental assessments in harbors servicing nuclear-powered vessels are being provided, in accordance with an Interagency Agreement with the Navy. A similar arrangement with the Federal Communications Commission provides for measurement of radiofrequency levels in specific locations of interest or concern.

Other activities in 1989 include: maintenance of an emergency response capability, coordination of EPA Regional Office review and testing of state emergency response plans, assistance to other EPA offices and to state radiological programs, and operation of ERAMS.

1988 Accomplishments

In 1988 the Agency obligated a total of \$3,135,900 supported by 47.4 total workyears for this program of which \$2,885,600 was from the Salaries and Expenses appropriation and \$250,300 was from the Abatement, Control and Compliance appropriation.

In 1988 EPA continued laboratory and technical support of regulation and guidance development. Program activities also included the maintenance of an emergency response capability, participation in a full field exercise of the Federal Radiation Emergency Response Plan, coordination of EPA Regional Office review and testing of state emergency response plans, assistance to other EPA offices and to state radiological programs, and operation of ERAMS. Ocean disposal support activities continued for the development of technical criteria in support of the Agency's ocean disposal regulation, which will cover low level radioactive waste.

RADIATION
Radon Action Program

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Radon Action Program					
Salaries & Expenses	\$1,562.9	\$2,515.8	\$2,542.4	\$2,614.9	\$72.5
Abatement Control and Compliance	\$4,899.6	\$7,499.7	\$7,398.8	\$15,398.8	\$8,000.0
TOTAL	\$6,462.5	\$10,015.5	\$9,941.2	\$18,013.7	\$8,072.5
TOTAL:					
Salaries & Expenses	\$1,562.9	\$2,515.8	\$2,542.4	\$2,614.9	\$72.5
Abatement Control and Compliance	\$4,899.6	\$7,499.7	\$7,398.8	\$15,398.8	\$8,000.0
Radon Action Program TOTAL	\$6,462.5	\$10,015.5	\$9,941.2	\$18,013.7	\$8,072.5

PERMANENT WORKYEARS

Radon Action Program	23.7	45.3	45.3	45.3
TOTAL PERMANENT WORKYEARS	23.7	45.3	45.3	45.3

TOTAL WORKYEARS

Radon Action Program	24.5	45.3	45.3	45.3
TOTAL WORKYEARS	24.5	45.3	45.3	45.3



RADIATION

Radon Action Program

Budget Request

The Agency requests a total of \$18,013,700 supported by 45.3 total workyears for 1990, an increase of \$8,072,500 and no change in total workyears from 1989. Of the request, \$2,614,900 will be for the Salaries and Expenses appropriation and \$15,398,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$72,500 in the Salaries and Expenses appropriation, an increase of \$8,000,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears.

RADON ACTION PROGRAM

1990 Program Request

The Agency requests a total of \$18,013,700 supported by 45.3 total workyears for this program, of which \$2,614,900 will be for the Salaries and Expenses appropriation and \$15,398,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$72,500 in the Salaries and Expenses appropriation, an increase of \$8,000,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increases reflect the increase in personnel and support costs and the establishment of a state grant program.

In 1990 EPA will continue to conduct a comprehensive Radon Action Program to address and reduce the health impacts of radon exposure. Specific activities will include the completion of the field operation and data collection phase of the national survey of radon in residences, continuation of the House Evaluation Program (HEP), and the development of protocols for measuring radon in schools. EPA will also continue to provide technical assistance to individual states in the design and execution of state-wide surveys, including the collection of screening measurements in homes and the presentation of analyses of potentially high-risk radon areas to the public.

For the first time, EPA will issue grants to states to assist them in the development and implementation of programs to assess and mitigate radon. State programs funded through these Federal grants will include activities such as carrying out radon surveys; establishment of radon assessment, mitigation, and control programs; development of public information and educational materials; development of data storage and management systems; operation of radon hotlines; and the purchase of analytical equipment.

EPA will continue the National Radon Measurement Proficiency (RMP) Program, which evaluates the capability of firms to accurately measure radon levels. The Agency will make information about the proficiency of individual

firms available to the public through state radiation offices. In addition, EPA will initiate the National Radon Mitigation Contractor Proficiency (RMCP) Program to evaluate the capability of firms to mitigate radon.

In 1990 additional Regional training centers will be selected and established through cooperative agreements. In addition to training offered at the centers, five sessions of the Radon Diagnostician and Mitigation Training course will be conducted in 1990.

1989 Program

In 1989 the Agency is allocating a total of \$9,941,200 supported by 45.3 total workyears for this program, of which \$2,542,400 is from the Salaries and Expenses appropriation and \$7,398,800 is from the Abatement, Control and Compliance appropriation.

In 1989 EPA is continuing to implement a comprehensive Radon Action Program to minimize the health risks of radon through partnerships with states. Specific activities include continuing field work and data collection efforts associated with the national survey of radon in residences, providing interim protocols needed to carry out a national survey of radon levels in schools, and developing standardized protocols for soil gas measurements and for measuring radon levels in workplaces. In addition, EPA is incorporating new technology into the HEP and evaluating and designing mitigation schemes for 20 homes in that program. The Agency is also providing direct technical assistance to states, including assisting eight states in designing and conducting intensive state-wide surveys.

In 1989 EPA is continuing to conduct the national RMP Program. The Agency is also developing a mitigation contractor proficiency program to evaluate radon mitigation firms and provide information to the public on the capability of firms working in the radon mitigation field.

The Agency is developing criteria for the selection of Regional training centers, establishing guidelines for their operation, and issuing cooperative agreements to establish three centers in 1989. The Agency is also updating the Radon Diagnostician and Mitigation Training Course and plans to conduct seven sessions of the updated three-day course in 1989.

1988 Accomplishments

In 1988 the Agency obligated a total of \$6,462,500 supported by 24.5 total workyears, of which \$1,562,900 was from the Salaries and Expenses appropriation and \$4,899,600 was from the Abatement, Control and Compliance appropriation.

EPA continued implementation of the Radon Action Program in 1988 through initiation of a national survey of radon levels in residences and development of protocols for soil gas and radon in schools measurements. In addition, the Agency began incorporating new technology into the HEP and evaluated and designed mitigation schemes for ten homes in the program. The Agency provided technical assistance to states and seven states completed surveys with design and analytic support from EPA.

The National RMP Program was continued and another round of evaluations was

completed. Eight sessions of the Radon Diagnostician and Mitigation Training Course were conducted. EPA also distributed an interim guide and technical guidance on radon reduction in new construction.



1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26



RADIATION
Radon Action Program Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Radon Action Program Implementation					
Salaries & Expenses	\$635.9	\$654.5	\$622.9	\$649.6	\$26.7
Abatement Control and Compliance	\$30.0				
TOTAL	\$665.9	\$654.5	\$622.9	\$649.6	\$26.7
TOTAL:					
Salaries & Expenses	\$635.9	\$654.5	\$622.9	\$649.6	\$26.7
Abatement Control and Compliance	\$30.0				
Radon Action Program Implementation					
TOTAL	\$665.9	\$654.5	\$622.9	\$649.6	\$26.7
PERMANENT WORKYEARS -----					
Radon Action Program Implementation	12.0	15.6	15.3	16.7	1.4
TOTAL PERMANENT WORKYEARS	12.0	15.6	15.3	16.7	1.4
TOTAL WORKYEARS -----					
Radon Action Program Implementation	13.4	17.0	16.7	16.7	
TOTAL WORKYEARS	13.4	17.0	16.7	16.7	



RADIATION

Radon Action Program Implementation

Budget Request

The Agency requests a total of \$649,600 supported by 16.7 total workyears for 1990, an increase \$26,700 and no change in total workyears from 1989. All of the request will be for the Salaries and Expenses appropriation. This represents an increase of \$26,700 for the Salaries and Expenses appropriation and no change in total workyears from 1989.

RADON ACTION PROGRAM IMPLEMENTATION

1990 Program Request

The Agency requests a total of \$649,600 supported by 16.7 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$26,700 for the Salaries and Expenses appropriation and no change in total workyears from 1989. The increase reflects increased personnel and support costs.

In 1990, the Regional Offices will continue to support implementation of the Radon Action Program by coordinating radon activities at the state and local level. Regions will oversee implementation of the Agency's new radon state grant program. Additionally, six to eight states will be assisted in the design and execution of state-wide radon surveys. Screening measurements will be collected in 15,000 to 20,000 homes and the Regions will assist in making the results available to the public.

The Regions will also continue participation in the House Evaluation Program (HEP), with an assessment of approximately twenty homes in ten states. The Regions will continue to support development of state and local radon capabilities by overseeing the operation of Regional training centers and by arranging five presentations of the Radon Diagnostic and Mitigation Training Course at selected locations. The Regions will also assist the states in their efforts to conduct the course independently.

1989 Program

In 1989, the Agency is allocating a total of \$622,900 supported by 16.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1989, Regional Offices are continuing to assist and coordinate activities to support the implementation of the radon program by providing direct support to the states in the development of state capabilities. This includes assistance in developing state survey designs, review of state plans

for participation in the national assessment of indoor radon, assistance in the development of state radon capabilities, participation in the HEP, and technical advice and assistance to state and local governments.

The Regions are assisting in the selection of sites for Regional training centers and will oversee these centers when they become operational. Regional Offices are also participating in the presentation of the Radon Diagnostic and Mitigation Training Course. Support to states is being provided as needed to deal with the most critical radon problems as they are discovered. The Regions are also continuing to act as distribution points for public information materials and are involved in radon public awareness activities.

1988 Accomplishments

In 1988, the Agency obligated a total of \$665,900 supported by 13.4 total workyears, of which \$635,900 was from the Salaries and Expenses appropriation and \$30,000 was from the Abatement Control and Compliance appropriation.

In 1988, the Regional Offices supported the Radon Action Program by providing technical assistance to states in their efforts to develop programs to address exposure to indoor radon. Regional efforts included developing state survey designs, reviewing state plans for participation in the national assessment of indoor radon, assisting in the development of state radon capabilities, participation in the HEP, assistance in the presentation of the Radon Diagnostic and Mitigation Training Course, and providing technical assistance to state and local governments. The Regions also conducted outreach programs to the public and local agencies as part of a continuing radon educational program.

8. Interdisciplinary

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	8-1
RESEARCH AND DEVELOPMENT	
Intermedia Programs	8-4
Scientific Assessment.	8-12
Technical Information and Liaison.	8-13
Quality Assurance Management	8-15
Exploratory Research Core Program.	8-15
Reduction of Uncertainties in Risk Assessment (RURA)	8-17
Human Exposure	8-18
Basic Ecological Research.	8-19
Capital Investments.	8-19
ABATEMENT AND CONTROL	
Environmental Review and Coordination	8-21
Agencywide Technology Transfer Staff.	8-24
Academic Training Grants.	8-27
ENFORCEMENT	
Enforcement Policy and Technical Support.	8-29
Enforcement Policy and Operations.	8-32
Criminal Investigations Program.	8-36
Technical Support - Office of Enforcement and Compliance	
Monitoring	8-38



INTERDISCIPLINARY

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					

APPROPRIATION					

Salaries & Expenses	\$32,194.3	\$33,801.8	\$35,001.2	\$40,462.8	\$5,461.6
Abatement Control and Compliance	\$7,225.7	\$10,672.0	\$11,043.5	\$12,160.0	\$1,116.5
Research & Development	\$21,617.9	\$29,493.0	\$30,849.3	\$65,871.6	\$35,022.3
Scientific Activities	\$19.1				
Overseas					
TOTAL, Interdisciplinary	\$61,057.0	\$73,966.8	\$76,894.0	\$118,494.4	\$41,600.4
PERMANENT WORKYEARS	581.4	633.7	656.1	740.0	83.9
TOTAL WORKYEARS	630.2	657.6	679.9	740.0	60.1
OUTLAYS	\$62,066.7	\$69,494.1	\$72,246.7	\$113,974.5	\$41,727.8
AUTHORIZATION LEVELS	All authorization except for Research and Development is by virtue of the Appropriation Act. The Environmental Research, Development and Demonstration Act expired September 30, 1981. Reauthorization is pending.				



INTERDISCIPLINARY

OVERVIEW AND STRATEGY

The Environmental Protection Agency's (EPA) Interdisciplinary Program is composed of several activities that cut across programmatic lines and are not readily assignable to a specific media. These programs address environmental concerns that affect several media and require an interdisciplinary approach. The Interdisciplinary Program includes the Intermedia Research Program, the Federal Agencies Compliance Program and the National Environmental Policy Act (NEPA) Compliance Program, and the legal support programs for the Agency's enforcement efforts.

Intermedia Research

The Intermedia Research Program consists of eight major activities: scientific assessments, technical information and liaison, quality assurance management, exploratory research, reducing uncertainties in risk assessment, human exposure assessment, basic ecological research, and capital equipment. The Scientific Assessment Program has responsibility for developing uniform risk assessment guidelines for Agency-wide application, assuring consistency of approach to guidelines, and coordinating with other agencies through the Risk Assessment Forum. The Technical Information and Liaison Program provides for production and transfer of technical and scientific information products developed by the Office of Research and Development (ORD) with an emphasis on communicating cost-effective methods for complying with EPA's regulations. The Quality Assurance Management Program provides centralized guidance and management for the Agency's quality assurance activities and performs audits to assess the effectiveness of the Agency's Quality Assurance efforts. The Exploratory Research Program provides long range exploratory research, conducted primarily through grants and academic research centers. It includes the Visiting Scientist Program. The integrated program to Reduce Uncertainties in Risk Assessment includes projects to develop dose-response and exposure models for estimating the adverse effects of environmental pollution on humans and ecosystems. The Human Exposure Assessment Program will evaluate the effects on humans of exposure to pollutants from all sources. The Basic Ecological Research Program will define appropriate endpoints to assess ecological health and collect statistics and other relevant data to define ecological quality trends and report on them periodically. Finally, a Capital Equipment Program will ensure that the Agency acquires the high caliber of scientific instrumentation necessary to produce first-rate research and attract and retain the highest quality researchers.

Abatement, Control, and Compliance

The Environmental Review and Coordination Program accomplishes statutory objectives under the authority of the National Environmental Policy Act (NEPA); Section 309 of the Clean Air Act; and Executive Order 12088 - Federal Compliance with Pollution Control Standards; and includes four program activities as well as support for regional interdisciplinary projects and EPA technology transfer activities. The NEPA Compliance program assures EPA's actions comply with the intent of NEPA. This includes reviews that are the functional equivalent for those Agency programs that are not specifically

covered by NEPA. The Federal Facilities Compliance Program oversees Federal compliance with all Federal statutory environmental requirements, and specifically with Executive Order 12088. The Environmental Review Program ensures that Federal agencies carry out their activities in an environmentally sound manner pursuant to the National Environmental Policy Act and Section 309 of the Clean Air Act.

The Indians program develops and implements policies for dealing with environmental problems on Indian lands. Regional interdisciplinary projects enable rapid response to unique intermedia environmental problems. EPA's technology transfer activities are intended to improve efficiency and performance in environmental programs through technology transfer and information exchange.

Enforcement

The Enforcement Policy and Technical Support Program provides consistent direction to EPA enforcement for all non-Superfund media to assure the most effective possible stewardship of EPA's enforcement responsibilities as they contribute to the protection of environmental quality. To accomplish this goal, this program establishes compliance monitoring and enforcement priorities, policies, and procedural guidelines so that enforcement actions are properly selected and prepared and establishes measures to ensure policies and procedures are correctly implemented by the media enforcement programs and Regional offices. It conducts all legal case development, litigation, and adjudicatory hearing activities for media enforcement programs, including oversight of evidence gathering, preparation and management of cases, and referral of cases to the Department of Justice for litigation.

In addition, this program contains the Agency's criminal investigations effort which entails investigation, preparation, and referral of cases involving criminal violations of environmental statutes. Investigators and attorneys provide support to the Department of Justice during subsequent investigations and litigation of these cases.

The National Enforcement Investigations Center (NEIC) provides specialized technical expertise in support of EPA enforcement case preparation activities. NEIC serves as a point of coordination and support for complex investigations which have a national impact on environmental enforcement.

Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	8-1
RESEARCH AND DEVELOPMENT	
Intermedia Programs	8-4
Scientific Assessment.	8-12
Technical Information and Liaison.	8-13
Quality Assurance Management	8-15
Exploratory Research Core Program.	8-15
Reduction of Uncertainties in Risk Assessment (RURA)	8-17
Human Exposure	8-18
Basic Ecological Research.	8-19
Capital Investments.	8-19



INTERDISCIPLINARY
Intermedia Programs

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Scientific Assessment					
Salaries & Expenses	\$1,494.1	\$1,529.8	\$2,264.6	\$2,385.1	\$120.5
Research & Development	\$1,014.8	\$898.3	\$1,880.7	\$1,844.8	-\$35.9
TOTAL	\$2,508.9	\$2,428.1	\$4,145.3	\$4,229.9	\$84.6
Technical Information & Liaison					
Salaries & Expenses	\$3,143.4	\$4,367.7	\$4,361.3	\$5,480.1	\$1,118.8
Research & Development	\$1,197.0	\$1,980.3	\$2,354.2	\$3,079.4	\$725.2
TOTAL	\$4,340.4	\$6,348.0	\$6,715.5	\$8,559.5	\$1,844.0
Quality Assurance Management					
Salaries & Expenses	\$815.8	\$849.5	\$849.5	\$901.9	\$52.4
Research & Development	\$890.8	\$855.4	\$855.4	\$833.9	-\$21.5
TOTAL	\$1,706.6	\$1,704.9	\$1,704.9	\$1,735.8	\$30.9
Exploratory Research Core Program					
Salaries & Expenses	\$994.8	\$783.5	\$783.5	\$1,153.5	\$370.0
Research & Development	\$15,516.4	\$15,759.0	\$15,759.0	\$25,639.5	\$9,880.5
TOTAL	\$16,511.2	\$16,542.5	\$16,542.5	\$26,793.0	\$10,250.5
Reduction of Uncertainties in Risk Assessments					
Salaries & Expenses		\$279.7	\$280.3	\$278.2	-\$2.1
Research & Development	\$2,998.9	\$10,000.0	\$10,000.0	\$10,000.0	
TOTAL	\$2,998.9	\$10,279.7	\$10,280.3	\$10,278.2	-\$2.1
Human Exposure Assessment					
Salaries & Expenses				\$858.6	\$858.6
Research & Development				\$3,259.8	\$3,259.8
TOTAL				\$4,118.4	\$4,118.4

INTERDISCIPLINARY
Intermedia Programs

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Basic Ecological					
Research					
Salaries & Expenses				\$796.4	\$796.4
Research & Development				\$17,214.2	\$17,214.2
TOTAL				\$18,010.6	\$18,010.6
Capital Investments					
Research & Development				\$4,000.0	\$4,000.0
TOTAL				\$4,000.0	\$4,000.0
TOTAL:					
Salaries & Expenses	\$6,448.1	\$7,810.2	\$8,539.2	\$11,853.8	\$3,314.6
Research & Development	\$21,617.9	\$29,493.0	\$30,849.3	\$65,871.6	\$35,022.3
Intermedia Programs TOTAL	\$28,066.0	\$37,303.2	\$39,388.5	\$77,725.4	\$38,336.9
PERMANENT WORKYEARS					

Scientific Assessment	25.2	25.1	38.5	39.1	.6
Technical Information & Liaison	40.6	63.9	63.5	72.0	8.5
Quality Assurance Management	11.4	14.5	14.5	14.5	
Exploratory Research Core Program	16.6	13.0	13.0	15.0	2.0
Reduction of Uncertainties in Risk Assessments		4.0	4.0	4.0	
Human Exposure Assessment				13.0	13.0
Basic Ecological Research				12.0	12.0
TOTAL PERMANENT WORKYEARS	93.8	120.5	133.5	169.6	36.1

INTERDISCIPLINARY
Intermedia Programs

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

TOTAL WORKYEARS

Scientific Assessment	27.1	25.1	38.5	39.1	.6
Technical Information & Liaison	43.9	63.9	63.5	72.0	8.5
Quality Assurance Management	11.4	14.5	14.5	14.5	
Exploratory Research Core Program	16.9	13.0	13.0	15.0	2.0
Reduction of Uncertainties in Risk Assessments		4.0	4.0	4.0	
Human Exposure Assessment				13.0	13.0
Basic Ecological Research				12.0	12.0
TOTAL WORKYEARS	99.3	120.5	133.5	169.6	36.1



INTERDISCIPLINARY

Intermedia Programs

Principal Outputs by Objective

Objective 1: Uniform Risk Assessment

- 1990:
 - o Final guidelines for exposure measurements, neurotoxicity, and non-cancer health effects. (Scientific Assessment)
 - o Final amendments for guidelines on cancer and developmental toxicity. (Scientific Assessment)
 - o Risk Assessment Forum analyses of specific risk assessment issues (Scientific Assessment)
 - o Development of a mainframe version of the IRIS system (Scientific Assessment)
- 1989:
 - o Final guidelines for assessment of risks to the male and female reproductive system. (Scientific Assessment)
 - o Propose guidelines for neurotoxicity, making and using exposure measurements, and for assessing certain risks from non-cancer health effects. (Scientific Assessment)
 - o Propose amendments to current guidelines for cancer and developmental toxicity. (Scientific Assessment)
 - o Develop guidelines for ecological risk assessment. (Scientific Assessment)
 - o Issue final reports from 1988 Risk Assessment Forum (Scientific Assessment)
 - o Addition of inhalation reference doses to the IRIS system (Scientific Assessment)
- 1988:
 - o Proposed guidelines for assessing male reproductive risk and for assessing female reproductive risk (Scientific Assessment)
 - o The Risk Assessment Forum documents, including:
 - Special Report on Ingested Inorganic Arsenic
 - Skin Cancer, Nutritional Essentiality - Final and Thyroid Follicular Cell Carcinogenesis
 - Mechanistic and Science Policy Considerations - External Review Draft. (Scientific Assessment)

Objective 2: Technical Information and Regulatory Support

- 1990:
 - o Analysis to ensure scientific integrity in the Agency's regulatory development process (Technical Information)
- 1989:
 - o Analysis to ensure scientific integrity in the Agency's regulatory development process (Technical Information)

- 1988: o Analysis to ensure scientific integrity in the Agency's regulatory development process (Technical Information)

Objective 3: Technology Transfer

- 1990: o Seminar series on the statistical procedures used to detect groundwater contamination at hazardous waste facilities. (Technical Information)
- o Workshops on the use of the expert system for evaluating and improving POTW performance. (Technical Information)
- o Handbook on air toxics risk assessment and control alternatives. (Technical Information)

- 1989: o Seminar series on innovative technologies for municipal wastewater treatment facilities. (Technical Information)
- o Handbook on sampling and analysis methods for toxic emissions from incinerators. (Technical Information)
- o Seminar series and publication on how to conduct sanitary surveys of small drinking water treatment facilities. (Technical Information)

- 1988: o Seminar series on leak detection and prevention methods, corrective action techniques, and inspection and maintenance procedures for underground storage tanks. (Technical Information)
- o Expert system for improving the performance of POTWs. (Technical Information)
- o Workshops and handbook on drinking water contamination. (Technical information)

Objective 4: Quality Assurance Management Program

- 1990: o Revised guidance on data quality objectives (QA Management)
- o Four management systems reviews (QA Management)
- o Guidance on audits of data quality (QA Management)
- o Program of alternative procedures for measurement methods validation and laboratory quality control (QA Management)
- o Review of 25 QA program plans (QA Management)
- o Development of four QA training courses (QA Management)

- 1989: o Support of the implementation of data quality objectives by Agency organizations (QA Management)
- o Three management systems reviews (QA Management)
- o Pilot demonstration of a Program of alternative procedures for measurement methods validation and laboratory quality control (QA Management)
- o Review of 30 QA program plans submitted by Agency organizations (QA Management)
- o Development of three QA training courses (QA Management)

- 1988: o Computerized data quality objectives implementation tools developed (QA Management)
- o Guidance on performing management systems review (QA Management)
- o Alternative procedures for measurement methods validation and

- laboratory quality control developed. (QA Management)
- o 35 QA program plans reviewed (QA Management)
- o Two QA courses developed (QA Management)

Objective 5: Exploratory Grants and Centers Program

- 1990: o Solicitation of 1990 research grants proposals (Exploratory Research)
- o Annual reports on Grants and Centers Programs (Exploratory Research)
- o Bibliography of research grant articles published (Exploratory Research)
- 1989: o Solicitation of 1989 research grants proposals (Exploratory Research)
- o Annual reports on Grants and Centers Programs (Exploratory Research)
- o Bibliography of research grant published articles (Exploratory Research)
- 1988: o Awarded four new research grants (Exploratory Research)
- o Publication of 99 technical articles in referred journals (Exploratory Research)

Objective 6: Distinguished Visiting Scientists Program

- 1990: o Solicitation and selection of scientists and engineers for 1990 Distinguished Visiting Scientists Program (Exploratory Research)
- 1989: o Solicitation and selection of scientists and engineers for 1989 Distinguished Visiting Scientists Program (Exploratory Research)
- 1988: o Selection of five new scientists or engineers for the Distinguished Visiting Scientists Program (Exploratory Research)

Objective 8: Reduction of Uncertainties In Risk Assessments (RURA)

- 1990: o Report on pharmacokinetic methods for route to route extrapolation (Scientific Assessments)
- o Correlation of learning and memory tasks in humans and laboratory animals (Health Effects)
- o Interspecies relation between sperm production and fertility (Scientific Assessments and Health Effects)
- o Ecosystem function, change and vulnerability, endpoints and hazards associated with system stress determined. (Processes and Effects)
- 1989: o Integrated approach to evaluate/characterize the uncertainties in risk assessment (Scientific Assessment)
- o Integrated exposure models which include human activity analysis to improve health risk assessments (Scientific Assessment)

- o Expanded project plan for reduction of uncertainties in health risk assessment (Scientific Assessment and Health Effects)
- o Integrated research program for improving ecological risk assessment (Processes and Effects)
- 1988: o Processes identified to improve health risk assessments. (health effects)
- o Report for the Congress on the planned research program to reduce uncertainties in risk assessment. (Scientific Assessment)

Objective 9: Human Exposure

- 1990: o Final report on TEAM Study of particles and metals. (Human Exposure)
- o Completion of continuous personal monitor for NO₂ (Human Exposure)

Objective 10: Basic Ecological Research

- 1990: o Classification and characterization of near-coastal systems and selection of prototype region for study. (Basic Ecological Research)
- o Catalog of indicators of ecosystem condition (Basic Ecological Research)
- o Existing monitoring data quality assessed (Basic Ecological Research).
- o Plan for rural air quality network to measure air pollutant exposures on ecosystems. (Basic Ecological Research)

INTERDISCIPLINARY

Intermedia Programs

Budget Request

The Agency requests a total of \$77,725,400 supported by 169.6 total workyears for 1990, an increase of \$38,336,900 and an increase of 36.1 total workyears from 1989. Of the request, \$11,853,800 will be for the Salaries and Expenses appropriation and \$65,871,600 will be for the Research and Development appropriation, an increase of \$3,314,600 in the Salaries and Expenses appropriation and an increase of \$35,022,300 in the Research and Development appropriation.

Program Objectives

The Intermedia budget subactivity consists of those ORD programs which cross all media. These are Uniform Risk Assessment, Technical Information and Liaison, Quality Assurance Management, Exploratory Research, Reduction of Uncertainties in Risk Assessment, Exploratory Research, Human Exposure, Basic Ecological Research, and Capital Investments.

Objective 1: Uniform Risk Assessment. This activity provides Agency-wide guidance to perform exposure and risk assessments. These guidelines are intended to ensure uniform assessments that rely on sound scientific principles and information.

Objective 2: Technical Information and Regulatory Support. This program manages the development of ORD's scientific and technical information products to ensure they are efficiently planned, controlled, distributed and produced with a high quality. This data is coordinated with proposed regulations in order to ensure that all regulatory decisions are based on the most current technical information.

Objective 3: Technology Transfer. These activities support the Stevenson-Wydler Technology Innovation Act (P.L. 96-480) as amended by the Technology Transfer Act of 1986 (P.L. 99-502). The program provides States and localities with the technology and scientific data needed to meet their regulatory responsibilities. The program provides on-site advice and assistance to Regions; and develops processes to expedite commercialization of industry and government research.

Objective 4: Quality Assurance Management Program. This activity provides policy direction, management guidance and oversight for the Agency's mandatory quality assurance program for environmental data operations.

Objective 5: Exploratory Grants and Centers Program. The grants program funds individual investigator-initiated research in areas of concern to the Agency through an open, competitive, peer-reviewed evaluation process. The long-term exploratory research centers will focus on multi-disciplinary research in the eight topic areas of Hazardous Waste Research, Ecosystems Research, Industrial Waste Elimination Research, Intermedia Transport Research,

Marine Sciences Research, Environmental Epidemiology, Advanced Environmental Control Technology Research, and Groundwater Research.

Objective 6: Distinguished Visiting Scientists Program. This activity develops and implements programs to strengthen and enhance the quality of the Agency's research programs by supporting the efforts of outside researchers at EPA facilities. The major activity is the Visiting Scientists and Engineers program, which enables accomplished scientists to conduct research at ORD laboratories.

Objective 7: Small Business Innovative Research (SBIR) Program. This program supports implementation of the Small Business Innovation Development Act (P.L. 97-219), which requires the Agency to award 1.25 percent of its extramural research budget to small business concerns which conduct innovative research.

Objective 8: Reduction of Uncertainties In Risk Assessments (RURA). This program supports an integrated effort to reduce uncertainties in ecological and health risk assessments.

Objective 9: Human Exposure. This activity provides the methods, monitoring approaches and models to determine and predict the exposures of human populations to environmental pollutants with known precision.

Objective 10: Basic Ecological Research. Under this activity, EPA would lead a coordinated Federal effort to monitor and gather environmental data and to report periodically on the status, changes, trends and relationships among pollutant exposures and indicators of ecological conditions in the nation's ecosystems. In addition, the Agency will carry out basic ecological research.

Objective 11: Capital Investments. This activity provides ORD laboratories and research programs the scientific support necessary to conduct investigations and analyses in a safe and timely manner with the most up to date instrumentation and components available. This enables ORD to recruit and retain the highest quality scientists and engineers.

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$4,229,900 supported by 39.1 total workyears for this program, of which \$2,385,100 will be for the Salaries and Expenses appropriation and \$1,844,800 will be for the Research and Development appropriation. This represents an increase of \$120,500 and a decrease of \$35,900 respectively, and an increase of 0.6 in total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The decrease reflects completion of several risk assessment guidelines. The program will provide guidance on risk assessment through development of guidelines and support documents, as well as provide support to the Risk Assessment Forum and the Integrated Risk Information System (IRIS). The program will also conduct risk assessments research on biostatistics and pharmacokinetics. The Agency will promote interagency consensus on the use of risk assessment guidelines through the Risk Assessment Forum. Chemical

summaries will be added to a mainframe version of IRIS bringing the number of chemical summaries available to 600.

1989 Program

In 1989, the Agency is allocating a total of \$4,145,300 supported by 38.5 total workyears for this program, of which \$2,264,600 is from the Salaries and Expenses appropriation and \$1,880,700 is from the Research and Development appropriation. Improvement of risk assessments is the primary focus of this program. During 1989 final guidelines for the assessment of risks to the male and female reproductive systems will be produced. Additional guidelines for neurotoxicity, making and using exposure measurements and for assessing certain risks from non-cancer health effects will be proposed. Work on ecological risk assessment guidelines will be conducted. The Risk Assessment Forum will promote consensus on risk assessment issues, and will ensure that consensus is incorporated into risk assessment guidance. Several Forum reports on risk assessment issues (e.g. thyroid neoplasia) will be issued as final documents. Inhalation reference doses will be added to IRIS. This will bring the total number of chemicals available in the system to 450. The second annual report on the Reduction of Uncertainties in Risk Assessment prepared by the Office of Health and Environmental Assessment will be distributed. A program is scheduled to begin on the evaluation of exposure uncertainties. Planning for a validation project comparing predictive exposure assessment with direct measurement and reconstructive exposure assessment is also underway.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,508,900 supported by 27.1 total workyears, of which \$1,494,100 was from the Salaries and Expenses appropriation and \$1,014,800 was from the Research and Development appropriation. In the area of risk assessment guidelines, two proposed guidelines were published in the Federal Register for public review and comment, the proposed Guidelines for Assessing Male Reproductive Risk and the proposed Guidelines for Assessing Female Reproductive Risk. The Risk Assessment Forum completed the following documents: Special Report on Ingested Inorganic Arsenic; Skin Cancer, Nutritional Essentiality-Final and Thyroid Follicular Cell Carcinogenesis: Mechanistic and Science Policy Considerations-External Review Draft.

TECHNICAL INFORMATION AND LIAISON

1990 Program Request

The Agency requests a total of \$8,559,500 supported by 72.0 total workyears, of which \$5,480,100 will be for the Salaries and Expenses appropriation and \$3,079,400 will be for the Research and Development appropriation. This represents an increase of \$1,118,800 and \$725,200 respectively, and an increase of 8.5 total workyears. This increase represents an expansion of the technology transfer and regional liaison efforts to enhance scientific and technical knowledge on environmental protection within the public and private sectors as mandated by the Stevenson Wylder Act and the Technology Transfer Act of 1986.

Technical Information and Regulatory Support. In 1990, the Center for Environmental Research Information (CERI) will track, process, and distribute all ORD reports, develop special reports as needed and produce all ORD project summaries and review them for policy implications. Activities will include processing reports and journal articles to the National Technical Information Service (NTIS), reviewing and controlling the quality of project summaries, and printing and distributing ORD information products. In 1990, CERI estimates it will receive 1,500 reports for processing to NTIS. Regulatory support activities will coordinate the available scientific data with proposed regulations. This will ensure that all regulatory decisions are based on the most current technical information. Responsibilities include participation in Agency regulatory work groups, review of option/selection packages, and analysis of regulatory requirements.

Technology Transfer. ORD disseminates technical data in response to requests from the EPA program offices, the EPA regional offices, States, and private industry. These activities will be carried out in support of the Stevenson-Wydler Technology Innovation Act and the Technology Transfer Act of 1986. Activities will include the design, production, quality control, and distribution of materials such as design manuals, users' guides, handbooks and workshops and a new project to target technology transfers to state and local environmental managers. Support for the National Environmental Technology Applications Corporation will be increased. Commercialization of Research and Development outputs will be implemented in accordance with the Federal Technology Transfer Act of 1986.

Regional Scientists Liaison. This program will be expanded in 1990 to permit full implementation of the Regional Scientists Program to all 10 EPA Regional Offices. The program will provide an ORD scientist as a liaison officer on station in each Regional Office to facilitate regional access to ORD products and services.

1989 Program

In 1989, the Agency is allocating a total of \$6,715,500 supported by 63.5 total workyears for this program, of which \$4,361,300 is from the Salaries and Expenses appropriation and \$2,354,200 is from the Research and Development appropriation. CERI activities in 1989 include tracking, processing and distributing all ORD reports, developing special reports as needed; and producing ORD summaries. Technology transfer activities support NETAC and the production of technology transfer tools for the Program Offices and the Regions. Regulatory support activities will ensure technically sound development of Agency regulations. The Regional Scientists Program has been expanded to 7 regions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,340,400 supported by 43.9 total workyears for this program, of which \$3,143,400 was from the Salaries and Expenses appropriation and \$1,197,000 was from the Research and Development appropriation. Major accomplishments in 1988 included processing of over 1,300 documents to NTIS. Approximately 400 project summaries were produced and distributed and over 30,000 requests for publications were answered. A program

was initiated to commercialize the research and development products of government and industry.

QUALITY ASSURANCE MANAGEMENT

1990 Program Request

The Agency requests a total of \$1,735,800 supported by 14.5 total workyears for this program, of which \$901,900 will be for the Salaries and Expenses appropriation and \$833,900 will be for the Research and Development appropriation. This represents an increase of \$52,400 and a decrease of \$21,500 respectively, and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The decrease in the Research and Development appropriation reflects completion of major efforts related to quality assurance program plans production and review.

In 1990, Program Offices, Regional offices and ORD laboratories will implement quality assurance procedures consistent with Agency policy to ensure that data generated by EPA are adequate to support the Agency's decision-making process. This program includes ongoing review of QA Program plans, support for development of data quality objectives; continuation of Management Systems Reviews; and implementation of alternative laboratory quality control procedures and data quality audits.

1989 Program

In 1989, the Agency is allocating a total of \$1,704,900 supported by 14.5 total workyears for this program, of which \$849,500 is from the Salaries and Expenses appropriation and \$855,400 is from the Research and Development appropriation. Quality assurance activities in 1989 involve the implementation and evaluation of programs to ensure the integrity of Agency data.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,706,600 supported by 11.4 total workyears for this program, of which \$815,800 was from the Salaries and Expenses appropriation and \$890,800 was from the Research and Development appropriation. Accomplishments in 1988 included the review of Quality Assurance Program plans, development of guidance on data quality objectives, performance of management systems reviews, development of alternative procedures for measurement methods validation and laboratory quality control, and quality assurance training.

EXPLORATORY RESEARCH CORE PROGRAM

1990 Program Request

The Agency requests a total of \$26,793,000 supported by 15.0 total workyears for this program. Of this total, \$1,153,500 will be for the Salaries and Expenses appropriation and \$25,639,500 will be for the Research and Development appropriation. This represents increases of \$370,000 in the

Salaries and Expenses appropriation, \$9,880,500 in the Research and Development appropriation and 2 total workyears. The increase in the Salaries and Expenses appropriation is the result of the additional workyears and increased personnel and support costs. The increase for the Research and Development appropriation is to provide greater support to basic long term research through the research grants program.

Exploratory Research Grants and Centers Program. The Agency requests a total of \$18,200,000 for the Research and Development appropriation for the Exploratory Research Grants program. This program will award 125 new grants and continue support for 55 existing grants. Applications from individual researchers will be received, peer reviewed and analyzed for relevance to EPA's mission and priorities. The program will emphasize continued improvement in quality of research, coordination with the Agency's research planning process, dissemination of results from completed grants, and coordination with other Federal agencies. Seminars and workshops featuring the completed work of grantees will continue in Agency laboratories and at other locations around the country.

The Agency requests a total of \$4,444,500 for the Research and Development appropriation (\$556,000 per center) for the Centers program to support studies of high priority to the Agency such as groundwater and hazardous waste control technologies. Management attention in the eight operating centers will focus on new trends and discoveries coming from ongoing research studies. The eight university centers and their research themes are as follows:

- o Louisiana State University - Hazardous Waste Research;
- o Cornell University - Ecosystems Research;
- o Illinois Institute of Technology - Industrial Waste Elimination Research;
- o University of California (Los Angeles) - Intermedia Transport Research;
- o University of Rhode Island - Marine Sciences Research;
- o University of Pittsburgh - Environmental Epidemiology;
- o University of Illinois (Urbana) - Advanced Environmental Control Technology Research;
- o Rice University, University of Oklahoma, Oklahoma State University-Groundwater Research.

An annual report will summarize the activities and accomplishments of the centers. Symposia, workshops and publications in referred journals ensure that information learned from center studies is shared with the environmental research community.

Distinguished Visiting Scientists Program. This program will enable distinguished scientists and engineers to work in ORD laboratories on projects of special importance to the Agency. Eminent scientists and engineers will collaborate with their counterparts in ORD laboratories on relevant areas of environmental research.

Small Business Innovative Research (SBIR) Program. The Agency requests a total of \$2,500,000 (1.25 percent of the extramural research budget) for the SBIR program to provide 36 awards in 1990 to small businesses conducting innovative research.

1989 Program

In 1989, the Agency is allocating a total of \$16,542,500 supported by 13.0 total workyears for this program, of which \$783,500 is from the Salaries and Expenses appropriation and \$15,759,000 is from the Research and Development appropriation. Of this \$15,759,000, \$8,200,000 is allocated for Exploratory Research Grants, \$4,576,000 is for the eight research centers, and \$2,500,000 is for the SBIR program. In 1989, the Exploratory Research Grants program will review 300 grant proposals, award 60 new grants and continue support for 29 grants. The program will also manage the academic research centers to support the Agency's long-term research needs. The Visiting Scientists Program is enabling outside scientists and engineers to conduct research in ORD laboratories. The SBIR Program will make 36 awards to small businesses.

1988 Accomplishments

In 1988, the Agency obligated a total of \$16,511,200 supported by 16.9 total workyears for this program, of which \$994,800 was from the Salaries and Expenses appropriation and \$15,516,400 was from the Research and Development appropriation. In 1988, the Exploratory Research Program reviewed 363 grant proposals, awarded 4 new grants and continued support for 50 grants. The Visiting Scientists Program approved the appointment of 13 new visitors to ORD laboratories to strengthen EPA's scientific basis for regulatory decision making. The SBIR program will award 37 contracts to small businesses.

REDUCTION OF UNCERTAINTIES IN RISK ASSESSMENT

1990 Program Request

The Agency requests a total of \$10,278,200 for this program supported by 4.0 total work years. Of this total, \$278,200 is from the Salaries and Expenses appropriation and \$10,000,000 will be for the Research and Development appropriation. This represents a decrease of \$2,100 in the Salaries and Expenses appropriation and no change in the Research and Development appropriation request. The program includes expansion of the human health risk efforts initiated in 1988 and initiation of an integrated program for reduction of uncertainties in ecological risk assessment.

Human Health Risk Assessment. In 1990, a report will be prepared describing procedures used to assess uncertainty in individual risk assessments. This report will address uncertainties in the assumptions and data used to develop risk assessments and will provide decision makers with a standard method to qualitatively and quantitatively assess uncertainty in specific cases. Research will focus on integrating exposure assessments with particular emphasis on the analysis of human activity patterns, improving exposure measurement data, and standardizing Agency use of exposure information. Further research will be conducted to develop physiologically based pharmacokinetics models focusing on route to route extrapolations and theoretical and computational models for making intra- and inter-species extrapolations. Research to improve dose-response models will concentrate on pulmonary, neurological and reproductive/developmental effects.

Ecological Risk Assessment. The emphasis will be placed on three areas of uncertainty. First, the program will address the uncertainty of how ecosystems function. Research will be directed towards measuring the current state of ecosystems, determining the nature, rate and direction of change and estimating the system vulnerability. Second, the program will conduct research to identify and measure ecological endpoints and interpret evaluations of functional change. Third, research will be performed to assess hazards associated with ecosystem stress.

1989 Program

The Agency is allocating a total of \$10,280,300 for this activity supported by 4.0 work years. Of the total, \$280,300 is from the Salaries and Expenses appropriation and \$10,000,000 from the Research and Development appropriation to develop a comprehensive program for reducing uncertainties in risk assessment. This research program addresses the major scientific uncertainties which impact the development of accurate Health and Ecological Risk Assessments. The four major activities of the Health Risk Assessment program are: 1) analysis of uncertainty in selected risk assessments; 2) develop integrated exposure models based on the relationship between ambient and biological measurements, including human activity analysis; 3) develop physiologically based pharmacokinetics models to more accurately predict the delivered dose of a toxicant to the site of action; and 4) develop biologically based dose-response models focused on our understanding of the mechanism through which toxicants exert their effect. Ecological Risk Assessment activities will be conducted to implement an integrated plan to reduce the gaps in the data base and improve the reliability of models required to assess the uncertainty of how ecosystems function.

1988 Accomplishments

In 1988 the Agency obligated \$2,998,900 from the Research and Development appropriation for this program. An integrated research program was initiated to improve the health risk assessment process. A report to Congress was prepared to inform the Congress of the planned research in this program area.

HUMAN EXPOSURE ASSESSMENT

1990 Program Request

The Agency requests a total of \$4,118,400 supported by 13.0 total work years. Of this total, \$858,600 is for the Salaries and Expenses appropriation and \$3,259,800 is for the Research and Development appropriation. This request reflects a shift of resources within the base research program from the Air to the Interdisciplinary media to conduct a complete program of research and evaluation of human exposure to environmental pollutants from all sources. This activity will include a major survey to determine the activity patterns of the population including lifestyles and use of consumer products. Also included are several studies on microenvironments (home, work, transportation) of human exposure. Methods for screening exposures near major point sources of pollution (industrial sites, hazardous waste sites) will be instituted. The existing Total Exposure Assessment Methodology (TEAM) program will continue to

provide human exposures estimates based on direct measurements. Data from each component of the program will be used to develop models of human exposure that can be used for extrapolation to entire populations at risk.

1989 Program

In 1989, there are no Human Exposure resources within the Interdisciplinary media. All resources related to this activity are in the Air media.

1988 Accomplishments

In 1988, there were no Human Exposure resources within the Interdisciplinary media. All resources related to this activity are in the Air media.

BASIC ECOLOGICAL RESEARCH

1990 Program Request

The Agency requests a total of \$18,010,600 supported by 12.0 total workyears for this program. Of this total, \$796,400 is for the Salaries and Expenses appropriation and \$17,214,200 is for the Research and Development appropriation. This request reflects both a shift of resources within the base research program to support a program in ecological monitoring and trends research and a request for additional resources to begin a national ecological research and environmental statistics initiative. This activity will facilitate EPA's lead role within the Federal government in classifying ecosystems, coordinating monitoring efforts, reviewing existing databases and monitoring networks, and performing research to develop indicators of current ecosystem conditions.

1989 Program

As part of the Agency effort in reducing uncertainties in risk assessment, preliminary work will be performed on ecosystem classification, monitoring network design, database management, and environmental statistics culminating in a research and implementation plan for the Basic Ecological Research Program.

1988 Accomplishments

No activity in this area.

CAPITAL INVESTMENTS

1990 Budget Request

The Agency requests a total of \$4,000,000 in the Research and Development appropriation for new and replacement scientific equipment. This is in addition to \$2,000,000 distributed among the media programs for media -specific equipment needs.

1989 Program

The Agency has allotted a total of \$2,000,000 from the Research and Development appropriation for the replacement of scientific equipment. This funding is distributed among the media programs.

1988 Accomplishments

The Agency obligated \$2,000,000 from the Research and Development appropriation to the various media programs for the replacement of scientific equipment.

Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	8-1
ABATEMENT AND CONTROL	
Environmental Review and Coordination	8-21
Agencywide Technology Transfer Staff.	8-24
Academic Training Grants.	8-27



INTERDISCIPLINARY
Environmental Review and Coordination

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Environmental Review
and Coordination

Salaries & Expenses	\$4,721.3	\$4,621.4	\$4,605.5	\$4,877.4	\$271.9
Abatement Control and Compliance	\$4,504.0	\$7,730.5	\$6,387.7	\$7,200.0	\$812.3
TOTAL	\$9,225.3	\$12,351.9	\$10,993.2	\$12,077.4	\$1,084.2

TOTAL:

Salaries & Expenses	\$4,721.3	\$4,621.4	\$4,605.5	\$4,877.4	\$271.9
Abatement Control and Compliance	\$4,504.0	\$7,730.5	\$6,387.7	\$7,200.0	\$812.3

Environmental Review and Coordination	TOTAL	\$9,225.3	\$12,351.9	\$10,993.2	\$12,077.4	\$1,084.2
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PERMANENT WORKYEARS

Environmental Review and Coordination	102.7	107.3	106.8	114.9	8.1
TOTAL PERMANENT WORKYEARS	102.7	107.3	106.8	114.9	8.1

TOTAL WORKYEARS

Environmental Review and Coordination	112.5	115.4	114.9	114.9	
TOTAL WORKYEARS	112.5	115.4	114.9	114.9	



INTERDISCIPLINARY

Environmental Review and Coordination

Budget Request

The Agency requests a total of \$12,077,400 supported by 114.9 total workyears for 1990, an increase of \$1,084,200 and no change in total workyears from 1989. Of the request, \$4,877,400 will be for the Salaries and Expenses appropriation and \$7,200,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$271,900 in Salaries and Expenses and an increase of \$812,300 in the Abatement, Control, and Compliance appropriation.

ENVIRONMENTAL REVIEW AND COORDINATION

1990 Program Request

The Agency requests a total of \$12,077,400 supported by 114.9 total workyears for 1990, an increase of \$1,084,200 and no change in total workyears from 1989. Of the request, \$4,877,400 will be for the Salaries and Expenses appropriation and \$7,200,000 will be for the Abatement, Control and Compliance appropriation, an increase of \$271,900 in Salaries and Expenses and an increase of \$812,300 in the Abatement, Control, and Compliance appropriation. The increase will support EPA compliance with its National Environmental Policy Act (NEPA) requirements, support the development of state environmental review programs for State Revolving Funds, and increased personnel and support costs. An increase in the demand for NEPA compliance resources in conducting functionally equivalent analyses, particularly in the CERCLA and TSCA areas is also expected. In 1990 a new Federal facilities compliance strategy will be fully implemented which utilizes new approaches to compliance and enforcement response. Emphasis will be placed on management techniques, such as environmental auditing. The Agency will continue to review and comment on draft and final EISs and improve coordination with other Federal agencies with respect to Section 309 and NEPA review processes. Finally, the Agency will continue overall outreach with Tribal groups by providing resources that will provide technical support and consultation designed to strengthen the environmental management capabilities of tribal governments.

Extramural resources included in this request will also support Agency-wide interdisciplinary environmental projects. These funds, to be extended on special environmental projects, will enable rapid Regional response to significant or unique intermedia environmental problems.

1989 Program

In 1989 the Agency is allocating a total of \$10,993,200 supported by 114.9 total workyears for this program, of which \$4,605,500 is from the Salaries and Expenses appropriation and \$6,387,700 from the Abatement, Control, and Compliance appropriation. In 1989, the NEPA compliance program provides

assistance to delegated state construction grants programs, ensures that EPA issued NPDES new source permits are in compliance with NEPA, assists EPA's Office of research and Development and laboratories in meeting NEPA requirements for research and development projects and assists EPA Regional program offices in their efforts to comply with other environmental laws and to carry out reviews equivalent to NEPA. The Agency continues to assist Federal agencies in identifying facilities needing pollution controls, determining the most cost effective control, and resolving disputes surrounding facilities which are out of compliance. Particular emphasis is placed on hazardous waste problems on Federal installations in cooperation with the Office of Solid Waste and Emergency Response. The Agency is also continuing to work on the review of environmental impacts of proposed projects, regulations, and other major Federal actions as required by both NEPA and Section 309. The major objective is to minimize the adverse environmental impact of Federal proposals by: (1) effective liaison with other Federal agencies, (2) early identification of significant environmental issues, and (3) timely review of major actions. In 1989, technical assistance continues to be provided to Indian tribes with the focus of the Indian programs being priority environmental problems on Indian Lands.

1988 Accomplishments

In 1988 the Agency obligated a total of \$9,225,300 supported by 112.5 workyears for this program, of which \$4,721,300 was from the Salaries and Expenses appropriation and \$4,504,000 from the Abatement, Control, and Compliance appropriation. The NEPA compliance program increased emphasis on oversight of state programs which are doing much of the basic environmental analysis. EPA also continued work on site specific assessments and EISs, and increased efforts in conducting functionally equivalent analyses, especially in the hazardous and toxic waste areas. The Agency continued its efforts to provide technical advice and assistance to Federal agencies to ensure that their facilities comply with pollution control requirements in a cost effective manner; to review and comment on proposed actions of other Federal agencies to ensure that public health and the environment are protected; to improve liaison with other Federal agencies; and to identify and resolve environmental concerns on Indian lands.

INTERDISCIPLINARY
Agencywide Technology Transfer Staff

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Agencywide Technology
Transfer Staff

Salaries & Expenses	\$437.8	\$149.5	\$711.0	\$747.0	\$36.0
Abatement Control and Compliance	\$394.0		\$1,745.0	\$1,760.0	\$15.0
TOTAL	\$831.8	\$149.5	\$2,456.0	\$2,507.0	\$51.0

TOTAL:

Salaries & Expenses	\$437.8	\$149.5	\$711.0	\$747.0	\$36.0
Abatement Control and Compliance	\$394.0		\$1,745.0	\$1,760.0	\$15.0

PERMANENT WORKYEARS

Agencywide Technology Transfer Staff	2.4	5.0	16.0	16.0	
TOTAL PERMANENT WORKYEARS	2.4	5.0	16.0	16.0	

TOTAL WORKYEARS

Agencywide Technology Transfer Staff	2.6	5.0	16.0	16.0	
TOTAL WORKYEARS	2.6	5.0	16.0	16.0	



INTERDISCIPLINARY

Agencywide Technology Transfer Staff

Budget Request

The Agency requests a total of \$2,507,000 supported by 16.0 total workyears in 1990. This represents an increase of \$51,000 and no change in total workyears from 1989. Of the request, \$747,000 will be for the Salaries and Expenses appropriation and \$1,760,000 will be for Abatement, Control, and Compliance appropriation. This represents an increase of \$36,000 in the Salaries and Expenses and an increase of \$15,000 in the Abatement, Control, and Compliance appropriation.

AGENCYWIDE TECHNOLOGY TRANSFER STAFF

1990 Program Request

The Agency requests a total of \$2,507,000 supported by 16.0 total workyears for this program, of which \$747,000 will be for the Salaries and Expenses appropriation and \$1,760,000 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of \$36,000 in the Salaries and Expenses appropriation, an increase of \$15,000 in the Abatement, Control, and Compliance appropriation, and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs.

This program will continue to develop a national program that identifies, documents, and disseminates selective exemplary environmental practices; establishes a national network of environmental technical experts; expands EPA's academic and vocational infrastructure through environmental management institutes; assures continued growth in the management of EPA's National Network for Environmental Management Studies (NNMES); staffs the Administrator's National Advisory Council on Environmental Technology Transfer (NACETT) and its four committees, and oversees the response to those of its recommendations accepted by the Administrator; and identifies and promotes the development and use of needed new and innovative environmental technologies through appropriate cooperative efforts with organizations and institutions outside EPA and by identifying and initiating efforts to remedy administrative and other barriers to the development and use of needed new environmental technology.

In addition, this program will seek and assess new and existing environmental technologies outside of the Agency for possible use by the Agency or by others and will do so with the assistance of experts in academia, and among technological leaders in business and industry, and in other Federal, State and local agencies.

1989 Program

In 1989, the Agency is allocating a total of \$2,456,000 supported by 16.0 total workyears for this program of which \$711,000 is from the Salaries and Expenses appropriation and \$1,745,000 is from the Abatement, Control and Compliance appropriation. The program is developing a national program to identify, document and disseminate selected environmental "best practices" that constitute model approaches worthy of replication; establishing a national network of environmental experts and communication focal points at the Federal and State levels of government; expanding EPA's academic and vocational infrastructure ties through the development of regionally based cooperative environmental management institutes; assuring continued growth in the management of EPA's National Network for Environmental Management Studies (NNMES); and creating and staffing the Administrator's National Advisory Council for Environmental Technology Transfer (NACETT) to address issue areas of national concern. In cooperation with Program and Regional Offices, and State and local agencies, this program will identify and promote innovative environmental management and implementation strategies through ongoing program development activities and demonstrations. In cooperation with the Office of Research and Development (ORD), it will promote and support activities required by the Federal Technology Transfer Act of 1986 (FTTA) and President's Executive Order 12591 to accelerate the development and commercialization of needed new (environmental) technology. Finally, this program will manage the Administrator's National Small Community Regulatory Outreach Program.

1988 Accomplishments

In 1988, the Agency obligated a total of \$831,800 supported by 2.6 total workyears, of which \$437,800 was from the Salaries and Expenses appropriation and \$394,000 was from the Abatement, Control, and Compliance appropriation. During its six months of full scale operations, the following accomplishments were achieved: establishment of the Administrator's National Advisory Council on Environmental Technology Transfer consisting of 37 senior executives drawn equally from various sectors of society; completion of the first cycle of studies under the National Network for Environmental Management Studies; leading the development in conjunction with the Office of Research and Development and other EPA offices of the implementation policies and procedures for implementation within the Agency of the Federal Technology Transfer Act of 1986 and Executive Order 12591; supporting a wide array of new program-specific, Region-specific and Agencywide initiatives to improve the implementation of EPA programs through improved information sharing within and outside the Agency; promoting and supporting the development of university-led consortia within which to assess the efficacy of newly developed environmental technologies and to promote the commercialization of those technologies found to be needed and efficacious; development and initiation of a program to disseminate case studies of environmental best practices; and establishment of a network of technology transfer focal points in each Headquarters and Regional Office and in each State.

INTERDISCIPLINARY
Academic Training Grants

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Academic Training					
Abatement Control and	\$423.5	\$1,000.0	\$991.5		-\$991.5
Compliance					
TOTAL	\$423.5	\$1,000.0	\$991.5		-\$991.5
TOTAL:					
Abatement Control and	\$423.5	\$1,000.0	\$991.5		-\$991.5
Compliance					
Academic Training					
Grants	\$423.5	\$1,000.0	\$991.5		-\$991.5



INTERDISCIPLINARY

Academic Training Grants

Budget Request

The Agency requests no resources for this activity in 1990.

ACADEMIC TRAINING GRANTS

1990 Program Request

The Agency requests no resources for this program.

1989 Program

In 1989 the Agency is allocating \$991,500 for this program, which provide academic and professional training to state and local environmental personnel in the areas of pollution control and environmental engineering. The programs also are providing economic support, through fellowships and training grants, to minority students to allow them to receive academic training in the environmental field.

1988 Accomplishments

In 1988, the Agency obligated \$423,500 in training grants to assist States with issues in: toxic substances and hazardous wastes, air pollution, and enforcement case resolution.



Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>INTERDISCIPLINARY</u>	8-1
ENFORCEMENT	
Enforcement Policy and Technical Support.	8-29
Enforcement Policy and Operations.	8-32
Criminal Investigations Program.	8-36
Technical Support - Office of Enforcement and Compliance	
Monitoring	8-38



INTERDISCIPLINARY
Enforcement Policy & Technical Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
PROGRAM						

Enforcement Policy & Operations						
Salaries & Expenses	\$15,076.5	\$15,320.9	\$15,260.5	\$16,110.9	\$850.4	
Abatement Control and Compliance	\$493.7	\$330.6	\$324.8	\$1,525.1	\$1,200.3	
TOTAL	\$15,570.2	\$15,651.5	\$15,585.3	\$17,636.0	\$2,050.7	
Criminal Investigation Program						
Salaries & Expenses	\$2,070.3	\$2,637.5	\$2,635.9	\$3,412.3	\$776.4	
TOTAL	\$2,070.3	\$2,637.5	\$2,635.9	\$3,412.3	\$776.4	
Technical Support Office of Enforcement And Compliance Monitoring						
Salaries & Expenses	\$3,441.2	\$3,262.3	\$3,249.1	\$3,461.4	\$212.3	
Abatement Control and Compliance	\$1,410.5	\$1,610.9	\$1,594.5	\$1,674.9	\$80.4	
TOTAL	\$4,851.7	\$4,873.2	\$4,843.6	\$5,136.3	\$292.7	
TOTAL:						
Salaries & Expenses	\$20,588.0	\$21,220.7	\$21,145.5	\$22,984.6	\$1,839.1	
Abatement Control and Compliance	\$1,904.2	\$1,941.5	\$1,919.3	\$3,200.0	\$1,280.7	
Enforcement Policy & Technical Support	TOTAL	\$22,492.2	\$23,162.2	\$23,064.8	\$26,184.6	\$3,119.8

INTERDISCIPLINARY
Enforcement Policy & Technical Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PERMANENT WORKYEARS -----					
Enforcement Policy & Operations	289.1	297.0	296.1	318.8	22.7
Criminal Investigation Program	32.3	42.4	42.4	57.4	15.0
Technical Support Office of Enforcement And Compliance Monitoring	61.1	61.5	61.3	63.3	2.0
TOTAL PERMANENT WORKYEARS	382.5	400.9	399.8	439.5	39.7
TOTAL WORKYEARS -----					
Enforcement Policy & Operations	316.3	312.8	311.8	318.8	7.0
Criminal Investigation Program	33.3	42.4	42.4	57.4	15.0
Technical Support Office of Enforcement And Compliance Monitoring	66.2	61.5	61.3	63.3	2.0
TOTAL WORKYEARS	415.8	416.7	415.5	439.5	24.0

INTERDISCIPLINARY

Enforcement Policy & Technical Support

	ACTUAL 1988	CURRENT ESTIMATE 1989	ESTIMATE 1990	INCREASE + DECREASE - 1990 vs 1989
<u>Enforcement Actions</u>				
Administrative Orders				
EPA	2,964	3,503	3,687	+184
States	4,249	*	*	*
New Judicial Referrals				
EPA				
Civil	213	269	222	-47
Criminal	60	60	68	+8
State				
Civil	865	*	*	*
Judicial Cases, Ongoing				
Civil Cases Start of Year	627	620	703	+83
Civil Cases Concluded	220	186	190	+4
Active Consent Decrees	382	*	*	*
Criminal Investigations, New ...	94	96	105	+9
Investigations Start of Year..	113	148	*	*
Defendants Criminally Charged	73	*	*	*
Contractor Listing:				
Delistings and Discretionary				
Listings	10	29	30	1
Permit Support				
RCRA	41	70	158	+88
NPDES	339	390	342	-48
UIC	582	590	590	0
Penalties Assessed				
Administrative & Civil ... \$33,700,000		*	*	*
Criminal \$8,400,000		*	*	*

* Future year projections are not made for this data element.



ENFORCEMENT

Enforcement Policy and Technical Support

Budget Request

The Agency requests a total of \$26,184,600 supported by 439.5 total workyears for 1990, an increase of \$3,119,800 and an increase of 24.0 total workyears from 1989. Of the request, \$22,984,600 will be for the Salaries and Expenses appropriation and \$3,200,000 will be for the Abatement, Control and Compliance appropriation. This represents increases of \$1,839,100 and \$1,280,700, respectively.

ENFORCEMENT POLICY AND OPERATIONS

1990 Program Request

The Agency requests \$17,636,000 supported by 318.8 total workyears for this program, of which \$16,110,900 will be for the Salaries and Expenses appropriation and \$1,525,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$850,400 in the Salaries and Expenses appropriation, of \$1,200,300 in Abatement, Control and Compliance appropriation, and of 7.0 in total workyears from 1989. The increase in Salaries and Expenses reflects both the costs associated with the requested workyears and increased personnel and support costs. The increased Abatement, Control and Compliance funding reflects both an initiative for litigation support and increased funding for activities designed to foster capacity building in the Regions and states. The workyear increases are requested for legal enforcement work related to SARA Title III and the Criminal Investigations Program.

This program's goal is to respond to instances of non-compliance with environmental statutes by consistent, timely, and effective enforcement actions. Resources requested for Headquarters and the Regions reflect anticipated workload for new and ongoing civil and criminal judicial litigation as well as projected administrative enforcement actions. In 1990, additional legal resources will be needed to increase the focus on new requirements under SARA Title III regarding toxic substance reporting as well as legal support to an expanding criminal enforcement program. Criminal enforcement investigations, referrals, and indictments will expand dramatically as the criminal investigations program grows, as investigators are able to handle a greater number of significant leads on environmental crimes, and as increased numbers of cases are likely to go to trial. Increases in legal resources are requested for both Headquarters and the Regions to respond to this added workload.

Legal resources will be required to support high levels of civil judicial and administrative enforcement activity in all media. Particular areas of emphasis will include, in:

Hazardous Waste

- o enforcement of corrective action measures

- o enforcement follow-up to HSWA "hammer" provisions
- o enforcement against permit violations

Air

- o enforcement of newly promulgated benzene NESHAAP
- o enforcement under the woodstove NSPS
- o enforcement under the new Ozone Strategy, and CFC enforcement strategy

Water

- o aggressive use of administrative penalty authority against Publicly Owned Treatment Works (POTWs)
- o aggressive administrative enforcement support for wetlands protection
- o enforcement of SDWA monitoring requirements, with particular emphasis on high hazard contaminants

Toxics and Pesticides

- o enforcement against premanufacture notice and existing chemical compliance violations
- o enforcement of AHERA regulations regarding asbestos in public buildings
- o PCB disposal enforcement
- o SARA Title III reporting requirements related to both the toxic substance inventory and emergency reporting of a toxic or hazardous release
- o aggressive enforcement against pesticide misuse

Headquarters resources will focus on provision of appropriate guidance, selective involvement in major precedent-setting cases, capacity building (for Regions and states) and broad program oversight (to insure that Agency efforts are both focussed on appropriate targets and achieving proper results). Capacity building efforts, such as inspector development training, attorney training, and penalty model applications, begun as pilot efforts will be expanded with the increased Abatement, Control and Compliance funding requested. Policy work will continue in areas of new statutory interpretation and development of Agency enforcement strategies, based on lessons learned from oversight. Similarly, Headquarters staff will participate in a limited number of judicial and administrative cases in all media which demand national expertise. Administrative enforcement actions under SARA Title III related to information reporting requirements of the Toxic Release Inventory under Section 313 will require significant Headquarters staff involvement. In addition, continued emphasis on the contractor listing program will require Headquarters attention, and special efforts will be made to expand criminal enforcement capabilities in the states.

The Regions will be responsible for initiating new enforcement actions based upon statutory, regulatory, and programmatic directives. Civil judicial referrals to Headquarters, direct referrals to Justice, and administrative litigation in all media will receive legal support. Regional legal resources will be needed to respond to growth in the numbers of criminal investigations, referrals, indictments and penalties expected to occur as a result of the expansion in the criminal investigation program. Increased Regional workload

is also anticipated as a result of administrative enforcement actions taken under SARA Title III authority - primarily Section 313 which requires a facility to notify state and local authorities when a release of a hazardous and toxic chemical occurs. A small increase in Regional legal resources has been requested to meet increased workload in both these areas. Regional legal resources will also press vigorously for successful closure of cases active on the Agency's growing judicial docket, as well as careful oversight and follow-through on active consent decrees with conditions still not met. Support will also be given to permit decisions and appeals.

Follow through on enforcement actions begun in prior years will require significant Headquarters and Regional legal support. The enforcement consequences of several major statutory deadlines in 1988 and 1989 resulted in aggressive Agency use of legal resources and a growing judicial docket. For this reason, a major increase in Abatement, Control and Compliance funding is requested in 1990 to improve the Agency's tools in pursuing its growing caseload. As enforcement cases become more complex, litigation support funding has become crucial for major environmental enforcement case prosecution. Major non-Superfund judicial cases have changed in character from relatively clear technical issues to complicated assessments of corporate practice and/or management behavior. These cases often require commitment of substantial resources for litigation support activities including evidence audit, document organization, and development of automated indices. The Agency must also be able to call upon specialized talent to analyze evidence received through discovery (for example computer tapes). Use of these litigation support tools is expected to both improve the Agency's credibility in judicial proceedings and the terms of the settlements achieved.

1989 Program

In 1989, the Agency is allocating a total of \$15,585,300 supported by 311.8 total workyears for this program, of which \$15,260,500 is from the Salaries and Expenses appropriation and \$324,800 is from the Abatement, Control and Compliance appropriation.

The strong enforcement program carried out in 1988 is expected to continue. Legal enforcement support will address emerging areas such as water toxics and SARA Title III. By statute, enforcement priorities include:

- o The Clean Air Act (CAA): VOC sources in ozone nonattainment areas; violation of asbestos demolition and removal regulations; toxic air pollutant sources; and the chlorofluorocarbon (CFC) compliance program;
- o The Clean Water Act (CWA): pretreatment, wetlands protection;
- o TSCA/FIFRA: PCB disposal; Premanufacture Notices; compliance with the Asbestos Hazard Emergency Response Act (AHERA); worker protection requirements; pesticide suspension and cancellation; and
- o RCRA: land ban violations; storage and treatment violations.

Headquarters attorneys will develop or review guidance and policy on: RCRA corrective action schedules; RCRA permitting requirements; municipal waste enforcement strategy; CWA hearing procedures for Class I and II administrative penalties; model forms related to new CWA authorities; CAA enforcement under the New Ozone Strategy; CFC Enforcement Strategy, Benzene NESHP Enforcement

Strategy; TSCA Section 6 Asbestos Ban, AHERA regulations, enforcement of PCB retirement; and SARA Title III enforcement.

The scope of the Agency's enforcement agenda in 1989 is sufficiently broad and complex that successful support can only be maintained by continuing to build vigorously on streamlining initiatives begun in earlier years. For example, significant efforts are being made to test and refine innovative enforcement techniques, such as alternative dispute resolution. Coupled with implementation of direct referrals designed to enhance the line management capacity of the Regions, these strategies should enable the Agency to meet its enforcement commitments.

Headquarters resources continue to focus on direct involvement in major national litigation which demands special expertise, and in test cases under new statutory authorities (such as the administrative penalty authority under the Water Quality Act). Management of the growing contractor listing program will continue to demand attention, as will the criminal enforcement program (with particular emphasis on enhancing state capabilities).

In 1989, Regional legal resources are being devoted to administrative, civil, and criminal enforcement actions in support of program enforcement priorities in all media. Levels of effort reflect both continuing work in mature programs, introduction of new approaches (administrative penalty actions in SDWA, CWA) and increased enforcement efforts as a result of major statutory deadlines (National Municipal Policy, RCRA land ban). Regional staff have devoted considerable effort to improving the speed (while safeguarding the outcome) of the enforcement process. Specific examples include: development of standard approaches for use in certain types of administrative enforcement actions, an expansion of the use of paralegal specialists, and experimentation with greater use of new settlement techniques, such as environmental auditing provisions. These approaches, taken in conjunction with careful and comprehensive Regional planning of enforcement strategy, enable Regional legal resources to keep pace with much more complicated business.

1988 Accomplishments

In 1988, the Agency obligated a total of \$15,570,200 supported by 316.3 total workyears for this program, of which \$15,076,500 was from the Salaries and Expenses appropriation and \$493,700 was from the Abatement, Control and Compliance appropriation.

The thrust of this program in 1988 continued to be vigorous enforcement and compliance monitoring, in partnership with the states, to produce maximum environmental results, and aggressive use of both administrative and judicial enforcement to achieve compliance with environmental statutes. Record levels of civil and criminal referrals were sent to the Department of Justice. These actions coupled with strong administrative enforcement activity levels sent a clear message to the regulated community regarding the Agency's commitment to enforcing compliance. In addition, by the end of 1988 over 380 judicial consent decrees were in place and being monitored to ensure compliance with the provisions of the decrees. Where noncompliance with the terms of a consent decree was found, the Agency initiated contempt proceedings with the court to compel compliance.

Although final data are not yet available, preliminary statistics indicate that civil judicial and administrative penalty assessments for 1988 have

already exceeded levels achieved in 1987. Criminal penalties assessed prior to suspension more than doubled in 1988 from 1987 levels.

Activities at Headquarters included involvement in selected judicial actions with precedent potential, development of legal policy guidance and case management for the criminal investigation program, development and implementation of enforcement strategies and initiatives, and operation of the Strategic Planning and Management System for Agency enforcement. Particular emphasis was placed on policy and guidance necessary to swiftly implement the enforcement provisions of the Water Quality Act.

Regional legal resources were devoted to generation of civil referrals and administrative enforcement actions most likely to return significant violators to compliance, maintaining a credible enforcement presence, resolution of ongoing judicial cases and legal support to the criminal investigation program. Legal time was devoted to careful consultation with media counterparts early in the compliance monitoring and enforcement process, resulting in the generation of high number of enforcement actions with major compliance payoffs. Effective use was made of administrative penalty provisions under the Clean Water Act and Safe Drinking Water Act. Enforcement using these relatively new tools increased significantly over 1987 levels. In RCRA, enforcement efforts concentrated on administrative actions taken against violations by Treatment, Storage and Disposal Facilities. In the Air program, strong enforcement of the Asbestos Demolition and Renovation regulations sent a message to the demolition and renovation contracting industry regarding the EPA commitment to protecting the public from preventable exposure to asbestos.

CRIMINAL INVESTIGATION PROGRAM

1990 Program Request

In 1990, the Agency requests a total of \$3,412,300 supported by 57.4 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$776,400 and 15.0 in total workyears from 1989.

The objective of this program will continue to be forceful deterrence of violation of environmental laws by providing the regulated community clear evidence that willful (and in extreme situations, negligent) statutory violations will be met with harsh sanctions (in terms of both jail sentences and substantial assessed penalties). Close coordination will continue with each media program, to ensure the most effective targeting of these resources. The increase in workyears will enable a sizeable expansion in the investigations, referrals, and indictments pursued by the criminal investigators. These added criminal investigations will be carefully targeted. Aggressive prosecution of willful violators will expand the program's enormous deterrent value. Under SARA Title III, implementation of the toxic release inventory requirements will result in increased criminal investigation leads. Effective prosecution of these violations will send a clear message to the regulated community regarding willful violation of Title III requirements.

Continued effort will be made to expand and strengthen partnerships with State and other Federal law enforcement agencies through training and advisory support. Increased emphasis will be placed on leveraging in conjunction with other Federal and state law enforcement agencies through joint investigations.

Specific program emphases will include the following:

- o in RCRA, illegal disposal, storage and transportation of waste to unpermitted facilities; blended fuel/waste oil; loss-of-interim-status reduction in on-site capacity; land ban regulations; small quantity generators;
- o in CWA/SDWA, data falsification connected with greater use of toxicity limits in NPDES permits; unpermitted discharges into water and wetlands;
- o in CAA, air toxics, asbestos demolition; lead phase-down; major motor vehicle pollution control violations; and
- o in Sara Title III, provisions regarding notice of toxic releases and inventory reporting requirements.

1989 Program Request

In 1989, the Agency is allocating a total of \$2,635,900 supported by 42.4 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1989, the criminal investigation program continues its operation as a national network, with particular emphasis on hazardous waste enforcement, TSCA enforcement primarily concerning illegal disposal of PCB's, and water quality enforcement (where felony provisions provide improved opportunities for deterrence). In addition, priority is being given to the cases with the greatest deterrent impact in the areas of air toxics, data falsification and deliberate failure to report to EPA under TSCA. The program stresses close coordination with administrative and civil judicial enforcement initiatives to maximize the number of significant violators brought into compliance. The program continues to work closely with state criminal enforcement programs through the Environmental Criminal Coordinating Committees in the Northeast, South, Midwest and West, and the National Association of Attorneys General. In addition, close working partnerships are maintained with other Federal law enforcement agencies. For example, the Agency is implementing a Memorandum of Understanding with the U.S. Customs Service to coordinate investigative roles and responsibilities to better detect instances of illegal export of hazardous wastes.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,070,300 supported by 33.3 total workyears, all of which was from the Salaries and Expenses appropriation.

The program continued to reinforce the growing deterrent presence it achieved in prior years, as the Court system responded with stiff sanctions including a dramatic increase in penalties assessed.

In 1988, the number of criminal referrals as well as the number of new criminal investigations increased substantially. The proportion of cases producing significant indictments increased as did the number of pleas and convictions. This trend is expected to continue.

The program continues to put emphasis on rigorous criminal investigations, particularly with respect to multi-facility compliance issues; improved case management through efficient use of investigative resources; greater accessibility of criminal investigators to Assistant U.S. Attorneys; greater access to appropriate automated databases; and improved technical investigation and evidence audit support.

Priority was given to investigations, cases and enforcement actions having the highest potential for environmental improvement and protection of public health. The program operates in close cooperation with state environmental crimes units and other Federal law enforcement agencies, which effectively multiplies the visibility and deterrent message of criminal enforcement in the environmental protection arena.

TECHNICAL SUPPORT

1990 Program Request

The Agency requests a total of \$5,136,300 supported by 63.3 total workyears for this program, of which \$3,461,400 will be for the Salaries and Expenses appropriation and \$1,674,900 will be for the Abatement, Control and Compliance appropriation. This represents an increase from 1989 of \$212,300 in the Salaries and Expenses appropriation, an increase of \$80,400 in the Abatement, Control and Compliance appropriation, and an increase of 2.0 total workyears. The increase in Salaries and Expenses reflects both the cost of the added workyears requested and increased personnel and support costs. The increase in Abatement, Control and Compliance reflects the need to build more effective enforcement information systems to support the Criminal Investigation Program. The workyear change reflects increased emphasis on technical support of criminal investigations.

In 1990, the National Enforcement and Investigations Center (NEIC) will continue to provide case development support in nationally managed cases with the potential for precedent, unique technological requirements, and resource requirements exceeding Regional capabilities. NEIC will emphasize case support which promotes Regional priorities in toxics (air, water), ground water, public drinking water and wetlands. Illegal transport, storage and disposal of hazardous wastes will continue to be investigated, coupled with national compliance evaluations of multi-facility waste disposal firms, ground-water monitoring investigations, and environmental audit inspections. An increased level of effort is expected for evidence audit activities, automation of Potentially Responsible Parties Inventories for RCRA cases, consent decree tracking, and environmental compliance audits for EPA laboratories and other appropriate facilities. NEIC will also provide analytical and field support for both FBI and EPA criminal investigations. The agency has also been able to increase the effectiveness of the Criminal Investigations Program by providing FBI agents with the technical training necessary to investigate environmental crimes.

NEIC will continue to develop innovative management approaches to enforcement such as expansion of state enforcement coordinating committees to form a link between the environmental regulatory agencies and the law enforcement entities of the member states. This facilitates a technology and information transfer whereby both the law enforcement and environmental officials become aware of and use new approaches. Abatement, Control and

compliance resources will be devoted to improving access to cost-effective major information systems (such the Criminal Information Index, and commercial data bases on corporate structure and finances) to provide Regions and states with information vital to case development.

1989 Program Request

In 1989, the Agency is allocating a total of \$4,843,600 supported by 61.3 total workyears for this program, of which \$3,249,100 is from the Salaries and Expenses appropriation and \$1,594,500 is from the Abatement, Control and Compliance appropriation.

NEIC resources are supporting the development of significant enforcement litigation in all media. The Center's primary responsibilities include providing background analysis for case preparation and evidence audits, conducting field investigations and laboratory analyses, developing expert testimony, and negotiating the technical aspects of consent decrees. Cases are selected for NEIC support on the basis of program and Regional enforcement priorities.

The Center continues to serve as a coordination point between both Federal and state law enforcement and environmental protection agencies. It provides technical assistance and training to personnel in these agencies on topics which are vital to effective environmental enforcement (e.g. evidence handling, laboratory procedures, and criminal investigative techniques). The Center also continues to implement ways to make information systems function as a more effective tool in targeting environmental enforcement actions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,851,700 supported by 66.2 total workyears for this program, of which \$3,441,200 was from the Salaries and Expenses appropriation and \$1,410,500 was from the Abatement, Control and Compliance appropriation.

Particular emphasis was placed on support to the RCRA program in 1988, including auditing contractor performance on hazardous waste transportation and disposal. Under the Clean Water Act, the NEIC provided compliance evaluations, performance audit inspections, multi-media inspections, and evaluations of major publicly-owned treatment works suspected of noncompliance, as well as Clean Water Act case support. Technical assistance was also provided to the pesticides and toxics enforcement efforts, with particular emphasis on polychlorinated biphenyls (PCB's), as well as management in seven Regions of compliance inspections under Sections 5 and 8 of the Toxic Substances Control Act (TSCA).

9. Toxic Substances

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	9-1
RESEARCH AND DEVELOPMENT	
Toxics Substances Research.	9-7
Scientific Assessment.	9-14
Monitoring Systems and Quality Assurance	9-14
Health Effects	9-16
Environmental Engineering and Technology	9-17
Environmental Processes and Effects.	9-18
ABATEMENT AND CONTROL	
Toxic Substances Financial Assistance	9-21
Asbestos-in-Schools Loans and Grants	9-23
Asbestos-in-Schools Program Administration	9-24
Asbestos-in-Schools Contractor and Inspector Certification	9-25
Toxic Substances Strategies	9-26
Chemical Testing	9-28
Existing Chemical Review	9-29
New Chemical Review.	9-32
Asbestos-in-Buildings.	9-33
Regional Toxics Program.	9-34
OPTS Title III.	9-36
ENFORCEMENT	
Toxic Substances Enforcement.	9-40
Toxic Substances Enforcement	9-41
Toxic Substances Enforcement Grants.	9-43
OPTS Title III Enforcement.	9-44

TOXIC SUBSTANCES

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
APPROPRIATION					

Salaries & Expenses	\$43,835.9	\$45,101.4	\$44,996.7	\$47,567.3	\$2,570.6
Abatement Control and Compliance	\$79,031.8	\$82,056.8	\$81,236.0	\$42,920.7	-\$38,315.3
Research & Development	\$15,351.8	\$17,161.4	\$16,986.4	\$16,737.2	-\$249.2
TOTAL, Toxic Substances	\$138,219.5	\$144,319.6	\$143,219.1	\$107,225.2	-\$35,993.9
PERMANENT WORKYEARS	822.8	864.7	861.8	880.6	18.8
TOTAL WORKYEARS	863.1	875.0	871.6	880.6	9.0
OUTLAYS	\$130,925.1	\$143,954.6	\$142,854.6	\$113,155.2	\$29,699.4
AUTHORIZATION LEVELS	Authorization for the Toxic Substances Control Act expired on September 30, 1983. Reauthorization is pending.				

NOTE: 1988 Actual does not include \$105.0 discussed in OPTS Title III. It is included in the Superfund media total for 1988.



TOXIC SUBSTANCES

OVERVIEW AND STRATEGY

The Toxic Substances media covers programs implemented under four environmental statutes, all of which are focused on control of toxic chemical use. The Toxic Substances Control Act (TSCA) provides the authority and responsibility to protect human health and the environment from unreasonable risks arising from the manufacture, distribution, use or disposal of existing and new chemicals. The Asbestos School Hazard Abatement Act (ASHAA) directs the Environmental Protection Agency (EPA) to assist states and local educational agencies (LEAs) in determining the extent of risks from exposure to asbestos containing materials. The Asbestos Hazard Emergency Response Act (AHERA) imposes inspection and abatement requirements on all public and private elementary and secondary schools, and requires EPA to examine the issue of asbestos in public and commercial buildings. Finally, section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) requires EPA to establish an inventory of toxic chemical emissions from certain facilities as part of a broader emergency planning and community right-to-know program.

To carry out its mandates under the laws, EPA will implement the following major goals in 1990: 1) ensure new chemicals, including products of biotechnology, do not enter commerce without appropriate controls; 2) identify existing chemicals which pose unreasonable risks; 3) reduce risks from future marketing and use of existing chemicals; 4) remove especially toxic chemicals, such as asbestos and polychlorinated biphenyls (PCBs), from continued use; and 5) ensure strong enforcement and research and development support.

Ensure New Chemicals Do Not Enter Commerce Without Proper Controls

The New Chemical Review program reflects the preventive philosophy of TSCA by reviewing new chemicals for risks before they are manufactured or imported. The number of new chemical submissions received under section 5 of TSCA will reach an estimated 3,000 notices in 1990. New biotechnology product reviews, particularly those involving deliberate releases to the environment through field experiments, are expected to increase significantly. This increase reflects continued growth in the market for genetically engineered microorganisms and the expectation that many small scale research and development applications will reach full scale commercial development by 1990. EPA must review all submissions and impose appropriate controls or ban the manufacture or import of certain products in order to ensure protection of public health and the environment.

Identify Existing Chemicals Which Pose Unreasonable Risks

The Toxic Substances program carries out its review function on hundreds of thousands of existing chemicals in order to identify those which pose unreasonable risks by pursuing a multifaceted strategy:

- o New data on chemicals are screened to identify hazards;
- o Data in the possession of industry on manufacturing and use of chemicals are collected on chemicals of concern;

- o Industry is required to conduct studies and to do testing to fill data gaps on chemicals of concern;
- o Annual data on emissions and discharges of toxic chemicals are collected and made available to the public and other environmental programs at the Federal, state and local level;
- o Risk assessments on suspect chemicals are conducted to determine whether controls should be imposed on their future use.

There are important new aspects of this strategy for 1990. A test rule will be completed to fill data gaps identified in the Agency for Toxic Substances and Disease Registry's (ATSDR) toxicological profiles developed under section 110 of SARA. TSCA section 4 testing is identified in section 110 as a major mechanism for carrying out the mandated research program on chemicals which are found at known Superfund sites.

A test rule will also be completed to fill data gaps identified by the SARA section 313 Toxic Release Inventory (TRI). The TRI is the public inventory created from the submission of reports showing annual emissions and discharges of toxic chemicals by virtually all manufacturers and significant users of over 300 toxic chemicals. This new inventory is expected to identify new cases of possible exposure to toxic substances, which will lead to further investigation of these chemicals. In 1990 the second set of annual submissions will be processed and added to the inventory, and the data will be made available to the public.

Reduce Risks from Future Marketing and Use of Existing Chemicals

The Existing Chemicals program will focus on those chemicals for which there is the maximum potential for reducing risks through governmental intervention, and which cannot be controlled effectively by other Federal regulatory programs. The program will continue its work on controlling asbestos, PCBs and chlorinated solvents. It will add work on dioxins and furans and other chemicals, which are identified through such mechanisms as the TRI and by other Federal programs, for regulation under TSCA.

Remove Especially Toxic Chemicals from Continued Use

Some chemicals pose such unreasonable risks that controls on their use are not always sufficient and in many cases they must be removed from continued use. Two chemicals already subject to such removal actions are PCBs and asbestos used in schools. A major new initiative in this area in 1990 is the consolidation of the Asbestos-in-Schools program into a broader program related to asbestos in buildings. The Asbestos-in-Buildings program will implement the key recommendations made in the 1988 Report to Congress on asbestos in public and commercial buildings, including studies to develop improved data on exposure to asbestos in public and commercial buildings and to evaluate various mitigation methods.

In addition, to support the Agency's efforts to ensure that the removal of these especially toxic chemicals from continued use does not result in an actual increase in public health risk because of improper handling, the Agency will establish a Regional Toxics program to complement the existing toxic substances compliance program. This new program will work with the states to

help them become more active in program operations for the Asbestos-in-Buildings and PCB programs. This effort will seek to build a coordinated Federal/state program in these two areas.

Ensure Strong Toxic Substances Enforcement

The major objective of the Agency's Toxic Substances Enforcement program is to maintain an efficient and effective national compliance monitoring program with appropriate coverage of all enforceable TSCA regulations. The enforcement program depends increasingly upon the assistance of state agencies which conduct compliance monitoring inspections under the terms of cooperative enforcement agreements. Twenty-two states currently participate in the TSCA cooperative agreement program and this number is expected to increase by seven to ten states in 1990. State programs emphasize compliance monitoring of existing chemical control rules, particularly those for asbestos and PCBs. Since the states cannot initiate TSCA enforcement actions without meeting certain strict criteria of equivalency provided for in the law, the Agency is responsible for case development and prosecution for all detected violations, whether originating from state- or EPA-conducted inspections.

Of concern to both EPA and the public is controlling hazards from asbestos and assuring the proper storage and disposal of PCBs. The enforcement program is placing a growing emphasis on conducting a comprehensive compliance program in these areas, including more frequent and comprehensive inspections at PCB disposal sites, and will be targeting inspections at brokers, storers and transporters of such materials.

The Toxic Substances Enforcement program also supports the enforcement provisions of SARA Title III. Prior to the time that these provisions became fully enforceable, the Agency provided compliance assistance to the regulated community, the states, and local authorities. With all sections of Title III now fully enforceable, EPA has begun an inspection program to ensure that manufacturers, processors, and users of subject chemicals comply with section 313 requirements to submit reports of the annual emissions and discharges of toxic chemicals.

Ensure Strong Research and Development Support

The Office of Research and Development (ORD) will continue to support the Office of Toxic Substances (OTS) by performing research in the areas of test method development and validation; biomarkers, dosimetry and extrapolation; exposure monitoring; environmental engineering and technology; special human data needs; structure activity relationships (SARs); environmental fate and transport; ecology risk assessment; and biotechnology. In addition, research efforts will focus on development and evaluation of asbestos abatement, control and monitoring technologies, emission and monitoring methods for SARA Title III chemicals, and increased health and environmental effects and engineering work in biotechnology.

Consulting Services

Consulting services are used on an intermittent basis to supplement technical expertise needed in the asbestos program.



escalations such as rent, telephone, and utility rate increases.

Consulting Service

Management consulting services provide general advisory and consulting services in such areas as: management assistance for the design of financial systems, regional management assistance in support of the EPA/State Data Management program and management support of the Agency's public-private partnership initiative.

"pollutants". It also will have lead responsibility for important aspects of the Agency's global climate change program, working closely with the Offices of Research and Development and Air and Radiation as well as with other agencies and international organizations. Risk reduction will receive continued emphasis as will the targetting of resources to projects that support the program and Regional offices, as well as states, in this respect. Other areas of focus will include development of environmental indicators to evaluate programs and innovative approaches to the control of complex and multi-media environmental problems.

The Office of General Counsel will continue to provide legal advice and counsel to the Agency's top management and media program offices concerning legal interpretation of EPA administered statutes, other applicable laws, and on such matters as personnel, grants, and contracts. Additionally, the Office of General Counsel will continue to represent the Agency in all major regulatory actions, and ensure that legal errors are avoided and legal positions are presented in the most persuasive manner.

The Office of External Affairs will continue to provide a clear interpretation of EPA's programs and priorities; increase Agency effectiveness by improving Congressional liaison; continue effective liaison with state and local governments; establish outreach programs with the private and public sectors and involve citizen participation; reaffirm and strengthen Federal Agency contacts; and provide a crossmedia perspective in review of environmental problems.

The Office of Inspector General will continue to emphasize internal and management audits to improve the economy, effectiveness, and efficiency of EPA programs. The Office of Inspector General will increase the number of audits in construction grants program and begin audits of States' Revolving Fund programs. The office will continue its investigation of antitrust activities and other construction-related fraud and will aggressively pursue new initiatives to ferret out fraud in EPA-funded contracts. It will further its efforts in fraud prevention by publicizing its activities to EPA employees, identifying areas sensitive to fraud, and developing new fraud detection methods.

The Office of Administration and Resources Management will continue to assure a strong system of financial internal controls, including work toward integration and improvement of all Agency financial management and accounting systems; continue developing a program for better information management planning, particularly between EPA and states; continue improvements in contracts administration; pursue a focused human resources management effort to build a skilled career environmental workforce; continue to achieve significant productivity improvements; continue managing the planning, design and construction of a consolidated Headquarters facility; and continue to provide essential administrative and support services to enhance the Agency's ability to fulfill its various mandates.

In the Regional management areas, the Agency will continue its commitment to strengthen Regional environmental programs and maintain strong Regional planning and management efforts. Development of State/EPA data management plans to improve efficiency and reliability of methods for sharing environmental data will receive priority attention.

In Support, the program will continue to provide general support services to Agency programs. This request will also enable the Agency to continue its effort to replace obsolete computers in the Regional offices and to oversee the

Administration and Resources Management provides management activities in Headquarters, as well as administrative services to all program operations located in Cincinnati, Ohio and Research Triangle Park, North Carolina. The office has several components: Program Management, Financial Management, Comptroller, Organization and Health Services, Contracts and Grants, Facilities and Management Services, Information Systems and Services, and Human Resources Management.

Regional Management includes the centralized management and administrative functions performed in each Regional office. The Regional elements cover the Regional and Deputy Regional Administrators, their immediate staffs, and Regional staff for public affairs, Congressional and intergovernmental relations, and civil rights. Other activities include budget development and execution, preparation of Regional operating plans, legal services, program planning, regulatory and policy analysis, economic analysis, program evaluation, financial and personnel management, information management, administration of Freedom of Information Requests, and facilities and property management.

Support Costs include the costs of general support services for all Agency programs. In this diverse category are:

- o Office and building services, such as library services, commercial telephone use, printing and copying, utilities, security, ADP technical support, and custodial and maintenance services for programs located at Headquarters, Research Triangle Park, and Cincinnati;
- o Nationwide costs, such as facility rental costs, centralized data processing, professional training, U.S. Postal Service charges, Federal Telecommunications System (FTS) charges, unemployment and workmen's compensation, and health and safety costs for all Agency programs in all locations;
- o Office and building services for laboratories and field stations operated by the Offices of Air and Radiation, Research and Development, and Pesticides and Toxic Substances; and
- o Common services in Regional offices, such as supplies and equipment, commercial telephones, printing, facilities operations and maintenance, library services, and mini-computer operations.

Program Priorities

Priorities for the Executive Offices in 1990 will include: continued emphasis on enforcement and compliance efforts for both environmental and civil rights regulations; stronger support from Headquarters and Regions to small, minority, and women's environmental businesses; bringing greater scientific credibility to regulatory decision-making through an emphasis on reviews by the Science Advisory Board; more effective communication between Headquarters and the Regions; and continued international environmental activities with emphasis on global and regional air pollution issues such as global climate change and acid precipitation.

The Office of Policy, Planning and Evaluation will exercise a leadership role in multi-media pollution prevention by developing Agency policy, supporting state programs, and providing incentives for industry, consumers, and all levels of government to reduce or eliminate residuals before they become

MANAGEMENT AND SUPPORT

OVERVIEW AND STRATEGY

Management and Support provides executive direction and policy oversight for all Agency programs as well as those administrative and support services that are not assigned to a specific program. We will continue our efforts to provide quality legal services, promote technically and economically defensible regulatory and policy alternatives, enhance the public's perception and understanding of the Agency's goals, manage for environmental results, and pursue a focused human resources management effort to build a skilled career environmental workforce.

The major components of this medium are Program Management, Agency Management, Regional Management, and Support Costs.

Program Management includes policy development, program development and oversight, and the associated management activities for the Agency's environmental program offices. These include the Offices of Air and Radiation, Water, Enforcement and Compliance Monitoring, External Affairs, Pesticides and Toxic Substances, General Counsel, Research and Development, and Solid Waste and Emergency Response.

Agency Management includes Agencywide management functions and policy activities.

Policy Direction, through the Executive Offices at Headquarters, consists of the Administrator and Deputy Administrator and their immediate staffs, Regional Operations, Executive Support, Administrator's Representation Fund, International Activities, Civil Rights, Science Advisory Board, Administrative Law Judges, Small and Disadvantaged Business Utilization, and the Technology Transfer Staff.

Policy, Planning and Evaluation is organized into the following components: the Integrated Environmental Management and Pollution Prevention Programs and the Offices of Policy Analysis, Standards and Regulations, and Management Systems and Evaluation.

Legal Services for litigation in which the Agency is a defendant are provided to Agency programs by the General Counsel in Headquarters and by a Regional Counsel in each Regional office. The Office of General Counsel (OGC) provides legal services and advice to the Administrator and Agency managers. OGC, in cooperation with the Department of Justice, represents the Agency in all legal matters in which the Agency is a defendant. Additionally, OGC reviews proposed actions, decisions, and regulations to assure that they are legally defensible.

External Affairs activities are performed by five component offices: Legislative Analysis, Congressional Liaison, Public Affairs, Office of Community and Intergovernmental Relations, and Federal Activities.

Inspector General activities include investigation and audit of Agency activities to promote efficiency and effectiveness, and to prevent and detect fraud, waste, and abuse.

MANAGEMENT AND SUPPORT

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$333,397.1	\$358,218.6	\$359,179.5	\$388,943.4	\$29,763.9
Office of the Inspector General				21,417.4	\$21,417.4
Abatement Control and Compliance		\$9,700.0	\$13,778.3	\$12,640.0	-\$1,138.3
Scientific Activities Overseas	\$554.6				
TOTAL, Program Management	\$333,951.7	\$367,918.6	\$372,957.8	\$423,000.8	\$50,043.0

PERMANENT WORKYEARS	2,605.3	2,730.9	2,771.3	2,971.9	200.6
TOTAL WORKYEARS	2,845.4	2,878.0	2,917.7	2,917.9	54.2
OUTLAYS	\$334,689.1	\$368,449.3	\$373,250.6	\$415,768.7	\$42,518.1
AUTHORIZATION LEVELS	Authorization is by virtue of the Appropriation Act.				

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
Facilities and Management Services	11-59
Information Systems and Services	11-60
Human Resources Management	11-61
REGIONAL MANAGEMENT	
Regional Management	11-63
Resource Management - Regions.	11-66
Financial Management - Regions	11-66
Personnel Management - Regions	11-67
Administrative Management - Regions.	11-68
Regional Management.	11-68
Regional Counsel	11-69
Planning, Evaluation and Analysis - Regions.	11-70
SUPPORT COSTS	
Support Costs	11-72
Professional Training.	11-73
Nationwide Support Services.	11-74
Headquarters Support Services.	11-74
Regional Support Services.	11-75
Automated Data Processing Support Costs.	11-76
Lab Support - Research and Development	11-77
Lab Support - Air and Radiation.	11-77
Lab Support - Pesticides and Toxic Substances.	11-78

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT AND SUPPORT</u>	11-1
<u>PROGRAM MANAGEMENT</u>	
Program Management.	11-6
Program Management - Air and Radiation	11-9
Program Management - Water	11-10
Program Management - Enforcement and Compliance Monitoring	11-10
Program Management - External Affairs.	11-11
Program Management - Pesticides and Toxic Substances	11-12
Program Management - General Counsel	11-13
Program Management - Research and Development.	11-13
Program Management - Solid Waste and Emergency Response.	11-14
<u>AGENCY MANAGEMENT</u>	
Office of the Administrator/Executive Offices	11-16
Immediate Office of the Administrator.	11-19
Office of Regional Operations.	11-20
Office of Executive Support.	11-20
Administrator's Representation Fund.	11-21
Office of International Activities	11-22
Office of Civil Rights	11-23
Science Advisory Board	11-24
Office of Administrative Law Judges.	11-24
Office of Small and Disadvantaged Business Utilization	11-25
Office of Inspector General	11-27
Office of Inspector General.	11-28
Office of General Counsel	11-31
General Counsel.	11-32
Office of External Affairs.	11-33
Office of Legislative Analysis	11-35
Office of Congressional Liaison.	11-36
Office of Public Affairs	11-36
Office of Community and Intergovernmental Relations.	11-37
Office of Federal Activities	11-38
Office of Policy, Planning and Evaluation	11-40
Program Management - Policy, Planning and Evaluation	11-42
Integrated Environmental Management Program.	11-43
Office of Policy Analysis.	11-44
Office of Standards and Regulations.	11-46
Office of Management Systems and Evaluation.	11-47
Pollution Prevention Program	11-49
Office of Administration and Resources Management	11-51
Program Management-Administration.	11-54
Financial Management - Headquarters.	11-55
Office of the Comptroller.	11-56
Contracts and Grants Management - Headquarters	11-57
Organization and Health Services	11-58

11. Management and Support



commercial scale demonstration of the tangentially-fired boiler technology. Laboratory development will involve work in improved sorbents, reactivation of sorbents, humidification, precipitators and general support for the LIMB and E-SO_x processes. Field prototype testing of the E-SO_x process, a co-sponsored program with the Ohio Coal Development Office (OCDO) and Babcock and Wilcox (B&W), will be in progress at the Ohio Edison Burger Station. Support modeling, combustion testing, and preliminary design will be completed for the tangentially-fired boiler LIMB demonstration at Yorktown, VA. This large scale demonstration is important because approximately 40% of U.S. utility boilers are tangentially fired. The LIMB commercial demonstration program is being funded jointly by the Federal government and industry.

1989 Program

In 1989, the Agency is allocating a total of \$3,515,700 and 18.9 total workyears for this research, of which \$1,087,800 is from the Salaries and Expenses appropriation and \$2,427,900 is from the Research and Development appropriation.

Pilot-scale testing to improve SO_x and NO_x removal efficiency and cost effectiveness plus improve sorbent and humidification efficiency is being conducted. Research on the commercial-scale demonstration of the wall-fired technology is being completed and documented. Research is focusing on a commercial-scale demonstration of the tangential-fired boiler technology in order to complete a small boiler test to provide engineering design and construction parameters for the full scale demonstration. The LIMB commercial-scale demonstrations are jointly funded by the Federal government and the utility industry.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,597,200 supported by 19.7 total workyears for this research, of which \$1,097,800 was from the Salaries and Expenses appropriation and \$2,499,400 was from the Research and Development appropriation.

In 1988, research included: (1) testing of LIMB processes on a pilot-scale; (2) testing of high activity sorbent injection and mixing characteristics; (3) testing a commercial-scale demonstration of the wall-fired boiler technology at the Edgewater station of Ohio Edison; (4) determining engineering characteristics to design a commercial-scale demonstration of the tangential-fired boiler technology; and (5) monitoring and evaluating waste characteristics and disposal techniques at the commercial-scale wall-fired demonstration. The Department of Energy provided \$5,000,000 to support the commercial-scale demonstration of the tangential-fired boiler technology.

Understand and Quantify the Effects on Materials and Cultural Resources.

Research will progress towards developing damage functions for paint/substrate systems using data generated through chamber studies and will identify the micro/macro effects of acid deposition on specific coating/substrate systems. Incremental damage to galvanized steel will be targeted for the 1990 NAPAP materials assessment.

1989 Program

In 1989, the Agency is allocating a total of \$51,387,500 supported by 49.7 total workyears for this research, of which \$3,565,700 is from the Salaries and Expenses appropriation and \$47,821,800 is from the Research and Development appropriation. These resources are being used to complete high priority research needed for the NAPAP Final Assessment Report to Congress. Research being emphasized includes: improving current area source methodologies; testing emission models specific to major source sectors; a field study to evaluate RADM; developing dry deposition measurement techniques and biological response models for fish populations; correlation studies of forest condition and atmospheric deposition; and evaluation of various emerging control technologies.

1988 Accomplishments

In 1988, the Agency obligated a total of \$51,657,300 supported by 57.3 total workyears for this research, of which \$4,271,000 was from the Salaries and Expenses appropriation and \$47,386,300 was from the Research and Development appropriation.

Several key projects were completed in 1988 including an advanced version of the Regional Acid Deposition Model (RADM-II), the final 1985 air emissions data base and inventory, and a report on the Mid-Atlantic/Southeastern U.S. stream study. In addition, work continued on evaluating the extent and magnitude of changes in forest condition and on developing site-specific cost estimates for reducing SO₂ and NO_x air emissions.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$3,521,900 supported by 18.8 total workyears for this research, of which \$1,088,500 will be for the Salaries and Expenses appropriation and \$2,433,400 will be for the Research and Development appropriation. This represents increases of \$700 and \$5,500, respectively, and a decrease of 0.1 total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs, the increase in the Research and Development appropriation supports combustion engineering tests of a small prototype tangential-fired furnace, and the workyear reduction reflects a consolidation of resources for the Regional Scientists Program within the Interdisciplinary media.

Develop and evaluate LIMB Control Technology. Research will be conducted in three areas: (1) laboratory, bench, and pilot demonstration of innovative SO_x/NO_x technologies; (2) field prototype testing of the E-SO_x process; and (3)

Understand Atmospheric Processes. This program will broaden the Agency's understanding of acidic pollutants emitted into the atmosphere, and will deliver a predictive model (RADM) useful for policy-makers. Data collection and model evaluation will differentiate the contribution of local versus distant sources and will enable policy-makers to predict changes in deposition levels resulting from reductions in nearby or distant emissions. Other research includes sensitivity testing of the advanced version of RADM using existing monitoring data bases and refinement of RADM using field study data. RADM will be used to evaluate control strategies, perform source/receptor analyses, and provide deposition estimates for sensitive receptors. Evaluation of the question of non-linearities in the atmosphere, their importance in source/receptor relationships and in forecasting seasonal and annual deposition under alternative emission scenarios are critical elements of the NAPAP 1990 Assessment.

Establish Deposition Monitoring Data Bases. Research will quantify wet and dry deposition of acidic materials with greater resolution. Specific projects will include support for the 150 station National Trends Network (NTN) for wet deposition and operation of 52 dry deposition monitoring sites. This work will assist in the establishment of cause and effect relationships for use in effects studies and will help establish a statistically valid database to compare various levels of deposition. Information on deposition trends and data tapes will be used in preparing the final NAPAP Assessment Report.

Understand and Quantify Aquatic Effects. A national-scale assessment of the damage to sensitive aquatic ecosystems caused by both chronic and short-term acidification will be developed to support preparation of the final NAPAP Assessment Report. Current resource status estimates will be refined by examining the chemistry of "small lakes" and streams in small catchments which were not included in the National Surface Water Survey. In addition, the aquatics program is developing a system for classifying surface waters by quantifying the subset of surface waters (subpopulation) at risk to, or damaged by, acidic deposition. Included in this program are projects to develop regional-scale patterns in lake and stream water chemistry. A major focus will be placed on quantifying past damage (i.e., determining the extent both in numbers, surface areas, and proportion of the entire surface water resource to which acidic deposition could be responsible for the present chemical status of surface waters) and examining biological effects of surface water acidification (including effects on populations and physiological condition of fish and other biota).

Understand and Quantify Terrestrial Effects. The main thrust of cooperative research programs will be completion of data analysis and interpretation for the 1990 Assessment. Studies of multiple pollutants and stresses and the interactions of pollutant and natural stresses will be emphasized. Research will also concentrate on those areas which have shown, in problem definition studies, to have particular problems. The atmospheric exposure project which emphasizes integration of atmospheric data relevant to forests, support for interagency efforts in long-term monitoring, and improvement of ongoing monitoring networks will support the 1990 NAPAP Assessment by helping to develop exposure estimates that interface between the forest program and other NAPAP task groups. Finally, synthesis and integration (S&I) activities will support completion of the 1990 Assessment and production of other outputs due from the forest effects research program.

dose/response) for these plants, and predict the range of effects under alternative deposition level scenarios.

Objective 6. Understand and Quantify Materials and Cultural Resource Effects. This research will determine how materials are incrementally damaged from acid deposition. This includes determining the materials at risk and differentiating the effects of acid deposition from those of other sources of pollution.

Objective 7. Evaluate Control Technologies. This research will develop "cost of control" data to help evaluate alternative acid deposition control strategies. This includes analyzing selected engineering technologies, their performance and their costs.

Objective 8. Develop and Evaluate LIMB Control Technology. This research will develop and evaluate air emission control technologies that will remove sulfur oxides (SOx) and nitrogen oxides (NOx) from flue gases of pulverized coal-fired boilers.

ACID DEPOSITION

1990 Program Request

The Agency requests a total of \$34,685,800 supported by 33.6 total workyears for this research, of which \$2,016,000 will be for the Salaries and Expenses appropriation and \$32,669,800 will be for the Research and Development appropriation. This represents a decrease of \$1,549,700 in the Salaries and Expenses appropriation, \$15,152,000 in the Research and Development appropriation, and a decrease of 16.1 total workyears. The reduction reflects completion of aquatic effects research projects including all Direct/Delayed response program activities in the Northeast, Southeast and Mid-Appalachian regions; completion of some terrestrial effects research projects including assessments in the western conifers, eastern hardwoods, and southern commercial pines; completion of emission projection models; completion of RADM development, control technology assessments, and the galvanized steel materials effects research; and a reduction in the costs associated with the Dry Deposition Monitoring Network for the West.

Estimate Emissions from Man-made Sources. This research will produce estimates of major atmospheric acid-forming emissions resulting from man's activities and the relationships among these emissions. To enhance emission estimates from man-made sources, the Agency will examine the interrelationship of major acid deposition pollutants. Research will support development of emission inventories, new source tests, New Source Performance Standards (NSPS); and refinement of models specific to major source-sectors. This work will build on the 1985 emission data base and on the final SO₂, NO_x, volatile organic compounds (VOCs), and alkaline material emissions inventory and will be used in the Regional Acid Deposition Model (RADM). Substantial progress will be made toward a 1990 data base which will reduce uncertainty in emissions estimates and will be useful in assessing changes over a five-year time span. Information from this program will be used by other program areas and will be an important part of the 1990 NAPAP assessment.

ENERGY

Multimedia Energy

Budget Request

The Agency requests a total of \$38,207,700 supported by 52.4 total workyears for 1990, a decrease of \$16,695,500 and 16.2 total workyears from 1989. Of the request, \$3,104,500 will be for the Salaries and Expenses appropriation and \$35,103,200 will be for the Research and Development appropriation, a decrease of \$1,549,000 and \$15,146,500, respectively.

Program Objectives

The goal of multimedia energy research and development program is to provide EPA program and Regional offices; Federal, state, and local governments; and industry with the scientific information necessary to help guide the development and utilization of energy resources in an environmentally acceptable manner. This scientific information is obtained through the Acid Deposition research program which was established in response to the Energy and Security Act of 1980 and a control technology program which is investigating retrofit boiler technologies such as the Limestone Injection Multistage Burner (LIMB) process. Acid deposition research is coordinated through the Interagency Task Force of the National Acid Precipitation Assessment Program (NAPAP), chaired by the EPA Administrator, which is responsible for preparing the 1990 Final NAPAP Assessment Report to Congress. LIMB research is conducted in conjunction with the Department of Energy, which is responsible for the Federal Clean Coal Technology Program. The following objectives define the Agency's energy research and development activities:

Objective 1. Estimate Emissions from Man-made Sources. This research will improve the Agency's understanding of the amount of acidic pollutants formed as a result of man's activities.

Objective 2. Understand Atmospheric Processes. This research addresses the atmospheric processes involved in acid deposition and examines and predicts the transport, chemical transformation, and deposition processes of acidic air masses.

Objective 3. Establish Deposition Monitoring Data Bases. This research will quantify wet and dry acid deposition levels to establish deposition trends, provide vital inputs to effects studies, and provide precise information for statistical analyses on source/receptor relationships.

Objective 4. Understand and Quantify Aquatic Effects. This research will quantify the impacts of acidification on representative aquatic ecosystems.

Objective 5. Understand and Quantify Terrestrial Effects. This research will quantify the extent of acid deposition effects on important plants (i.e., forests and crops), develop quantitative cause and effect relationships (i.e.,



- o Report on a pilot-scale characterization of the E-SO_x process to control SO₂ air emissions in retrofit coal-fired applications
 - o Report on fundamental studies to enhance the LIMB process to control SO₂ air emissions in retrofit coal-fired applications
- 1988:
- o Report on the technical and economic feasibility of the E-SO_x process to control SO_x air emissions from existing coal-fired boilers
 - o Initiate testing of LIMB on a pilot-scale tangential-fired prototype (60 megawatt) boiler
 - o Complete testing of the wall-fired LIMB technology commercial-scale demonstration

1988: o Report on the Mid-Atlantic/Southeastern U.S. Stream Survey

Objective 5: Understand and Quantify Terrestrial Effects (Acid Deposition)

- 1990: o Final report on the roles of sulfur and nitrogen in forest decline
o Report on projections of the effect of alternative deposition scenarios on terrestrial ecosystems
- 1989: o Preliminary report on the roles of sulfur and nitrogen in forest decline
o Evaluation of factors other than air pollution affecting the growth and decline of forests
- 1988: o Annual Report on the Forest Response Program
o Report on seedling exposure studies
o Evaluation of the extent and magnitude of changes in forest conditions

Objective 6: Understand and Quantify Materials and Cultural Resource Effects (Acid Deposition)

- 1990: o Report on dose-response functions for selected coating systems
- 1989: o Field study report on acid deposition damage function for metallic materials
- 1988: o Report on field verification of the acid deposition damage function for galvanized steel

Objective 7: Evaluate Control Technologies (Acid Deposition)

- 1990: o Report on site-specific performance cost estimates of SO₂ and NO_x controls from 200 coal-fired power plants in the eastern U.S.
- 1989: o Update on "generic costs" for reducing SO₂, and NO_x air emissions
- 1988: o Interim Report on site-specific performance cost estimates of SO₂ and NO_x controls from 50 coal-fired power plants in the Eastern U.S.

Objective 8: Develop and Evaluate LIMB Control Technology (Engineering)

- 1990: o Final design report on the tangentially-fired LIMB demonstration
o Report on pilot-scale evaluation of the E-SO_x process utilizing recycled sorbent
- 1989: o Report on a commercial-scale demonstration of the wall-fired LIMB technology on controlling SO₂ and NO_x air emissions from coal-fired utility boilers

ENERGY

Multimedia Energy

Principal Outputs by Objective

Objective 1: Estimate Emissions from Man-made Sources (Acid Deposition)

- 1990: o Develop quality assurance plan for 1990 emissions inventory
- o Report on sensitivity testing of the advanced utility simulation and industrial emissions models
- 1989: o Report on and computer tape of the 1985 SO₂, NO_x, VOCs, and alkaline material air emissions inventory
- o Release updated versions of the advanced utility emissions simulation model and the industrial emissions model
- 1988: o Final 1985 air emissions inventory on SO₂, NO_x, VOCs, and alkaline material

Objective 2: Understand Atmospheric Processes (Acid Deposition)

- 1990: o Evaluate Regional Acid Deposition Model (RADM) using surface and aircraft monitoring data
- 1989: o State-of-science report on RADM with user's guide
- 1988: o Advanced version of RADM completed

Objective 3: Establish Deposition Monitoring Data Bases (Acid Deposition)

- 1990: o Report on temporal and spatial trends in acid deposition
- 1989: o Expand dry deposition monitoring network to 52 sites. First year data provided by 52 sites
- 1988: o Final report on the Pilot Snowfall Monitoring Study

Objective 4: Understand and Quantify Aquatic Effects (Acid Deposition)

- 1990: o Report on Direct/Delayed Response Program predictions for Mid-Appalachian region
- o Report on temporal and chemical variability in lakes within the Northeastern U.S.
- 1989: o Report on Direct/Delayed Response Program predictions for the Northeast and Southern Blue Ridge province (Level III)
- o Regional case studies of surface water response characteristics

ENERGY
Multi-Media Energy

PROGRAM	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
Acid Deposition					
Salaries & Expenses	\$4,271.0	\$3,566.3	\$3,565.7	\$2,016.0	-\$1,549.7
Research & Development	\$47,386.3	\$47,821.8	\$47,821.8	\$32,669.8	-\$15,152.0
TOTAL	\$51,657.3	\$51,388.1	\$51,387.5	\$34,685.8	-\$16,701.7
Environmental Engineering & Technology					
Salaries & Expenses	\$1,097.8	\$1,150.7	\$1,087.8	\$1,088.5	\$7
Research & Development	\$2,499.4	\$2,429.9	\$2,427.9	\$2,433.4	\$5.5
TOTAL	\$3,597.2	\$3,580.6	\$3,515.7	\$3,521.9	\$6.2
TOTAL:					
Salaries & Expenses	\$5,368.8	\$4,717.0	\$4,653.5	\$3,104.5	-\$1,549.0
Research & Development	\$49,885.7	\$50,251.7	\$50,249.7	\$35,103.2	-\$15,146.5
Multi-Media Energy TOTAL	\$55,254.5	\$54,968.7	\$54,903.2	\$38,207.7	-\$16,695.5
PERMANENT WORKYEARS					

Acid Deposition	52.4	49.7	49.7	33.6	-16.1
Environmental Engineering & Technology	19.6	20.0	18.9	18.8	-.1
TOTAL PERMANENT WORKYEARS	72.0	69.7	68.6	52.4	-16.2
TOTAL WORKYEARS					

Acid Deposition	57.3	49.7	49.7	33.6	-16.1
Environmental Engineering & Technology	19.7	20.0	18.9	18.8	-.1
TOTAL WORKYEARS	77.0	69.7	68.6	52.4	-16.2



ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>ENERGY</u>	10-1
RESEARCH AND DEVELOPMENT	
Multi-Media Energy.	10-3
Acid Deposition.	10-8
Environmental Engineering and Technology	10-10

Research and Development



ENERGY

OVERVIEW AND STRATEGY

The Multimedia Energy research and development program provides the scientific information necessary to evaluate environmental impacts and potential controls on the energy sector (e.g., utilities, industry, and automobiles). This research program focuses on two issues: (1) reducing scientific uncertainties related to acid deposition; and (2) developing testing and evaluating Limestone Injection Multistage Burner (LIMB) control technologies.

Acid Deposition

1990 is the final year of the National Acid Precipitation Assessment Program (NAPAP), mandated by the Energy Security Act of 1980 (Title VII of P.L. 96-294). NAPAP's objective is to understand the causes and effects of acid deposition and to provide policy makers with credible, peer reviewed scientific data which can be used to assess potential controls on air emissions that cause acid deposition. This research will be reduced in 1990 as the Agency places more focus on synthesizing and integrating results from completed projects for the 1990 NAPAP Final Assessment Report to Congress.

In 1990, continued research efforts will enhance the Agency's capability to predict deposition trends and will focus on providing an integrated assessment of the state-of-the-science for inclusion in the 1990 NAPAP Assessment Report to Congress. Research will continue to be focused in six major areas. First, air emission estimates of acid rain precursors will be improved. Second, the advanced version of the Regional Acid Deposition Model (RADM) will be evaluated using field data. RADM is designed to assist policy makers predict changes in acid deposition levels resulting from changes in nearby and remote source emissions. Third, wet and dry deposition of acidic pollutants will be monitored to enhance data bases for use in effects studies. Fourth, data will be integrated to produce a national scale assessment of damage to sensitive aquatic ecosystems. Fifth, forests considered sensitive to acid deposition will be studied while available data on forest effects will be integrated for the 1990 Assessment. Finally, the materials effects program will assess the effects of acid deposition on the service life of materials and develop estimates on material deterioration resulting from exposure.

LIMB Control Technology

The LIMB control technology program is designed to demonstrate an effective and inexpensive air emission control system that will simultaneously remove sulfur oxides (SOx) and nitrogen oxides (NOx) from the flue gases of existing pulverized coal-fired boilers. The 1990 program will emphasize testing the commercial-scale demonstration of the tangential-fired LIMB technology. The completion of the commercial-scale demonstration of the wall-fired LIMB technology is expected in 1989.



ENERGY

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Salaries & Expenses	\$5,368.8	\$4,717.0	\$4,653.5	\$3,104.5	-\$1,549.0
Research & Development	\$49,885.7	\$50,251.7	\$50,249.7	\$35,103.2	-\$15,146.5
TOTAL, Energy	\$55,254.5	\$54,968.7	\$54,903.2	\$38,207.7	-\$16,695.5

PERMANENT WORKYEARS	72.0	69.7	68.6	52.4	-16.2
TOTAL WORKYEARS	77.0	69.7	68.6	52.4	-16.2
OUTLAYS	\$57,328.2	\$59,667.1	\$59,595.6	\$52,016.0	-\$7,579.6

AUTHORIZATION LEVELS
 Authorization for Energy is under the Environmental
 Research, Development and Demonstration Act which expired
 September 30, 1981. Reauthorization is pending.

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>ENERGY</u>	10-1
RESEARCH AND DEVELOPMENT	
Multi-Media Energy.	10-3
Acid Deposition.	10-8
Environmental Engineering and Technology	10-10

10. Energy



program during the fourth quarter, including conducting a limited number of compliance inspections. Headquarters personnel developed enforcement response policies and compliance monitoring strategies corresponding to the legislation and rules, and provided initial training for Regional personnel. Headquarters staff participated in regulation development and issued guidance documents, inspection guidelines, procedural manuals and other materials to implement specific program activities.

cross-check production and facility profile data to identify facilities that might be expected to submit reports under section 313 but have not. Facilities with the highest potential for failure to submit reports will be targeted for inspections. ADP support will also enable Regions to monitor inspections and cases to manage the program most efficiently.

In 1990, the additional resources will permit the Agency to expand its compliance coverage of the regulated community to include emphasizing the quality and accuracy of data received by supporting contract inspections for data quality compliance. Also, Headquarters staff will complete the development and in-field application of an automated risk reduction inspection targeting system.

1989 Program

In 1989, the Agency is allocating a total of \$1,905,800 supported by 11.0 total workyears for this program, of which \$424,600 is from the Salaries and Expenses appropriation and \$1,481,200 of which is from the Abatement, Control and Compliance appropriation.

The Regions are providing compliance assistance to the regulated community, the states, and local authorities. Compliance assistance includes responding to inquiries from individual facilities or the regulated industry as a whole on enforcement requirements, providing training in compliance matters to industry, state or local representatives, and reviewing and implementing enforcement policies, strategies and inspection procedures. The Regions are also conducting a limited number of compliance inspections, some of which are integrated with other inspections under TSCA sections 5, 8 and 13. The Regions are also implementing case development as violations are detected.

In 1989, Headquarters personnel are developing final enforcement response policies and compliance monitoring strategies to accompany final rules developed by the Office of Toxic Substances under Title III, and providing training for regional personnel. Headquarters staff participate in regulation development to assure the enforceability of new rules and to develop rules of practice. Other projects include developing guidance documents, inspection guidelines, procedural manuals and other materials to implement specific program activities. Finally, staff are also conducting case development activities, and providing oversight and assistance in regional case development. Considerable attention to and oversight of case development is critical for a newly enforceable program to provide program-wide consistency among cases and to make precedent-setting determinations in cases of first impression, thereby assuring the integrity of the national compliance monitoring effort.

Headquarters is also providing oversight of the grant to the AARP to conduct inspections under Title III.

1988 Accomplishments

In 1988, the Agency obligated a total of \$315,800 supported by 7.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

During 1988, the Regions provided compliance assistance to the regulated community, the states, and local authorities in anticipation of the effective dates of various portions of the statute. The Regions initiated the compliance

TOXIC SUBSTANCES

OPTS Title III Enforcement

Budget Request

The Agency requests a total of \$2,993,500 supported by 11.0 total workyears for 1990, an increase of \$1,087,700 and no change in total workyears from 1989. Of this amount, \$512,300 will be for the Salaries and Expenses appropriation and \$2,481,200 will be for the Abatement, Control and Compliance appropriation, increases of \$87,700 and \$1,000,000 respectively.

OPTS TITLE III ENFORCEMENT

1990 Program Request

The Agency requests a total of \$2,993,500 supported by 11.0 total workyears for this program, of which \$512,300 will be for the Salaries and Expenses appropriation, and \$2,481,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$87,700 for the Salaries and Expenses appropriation, an increase of \$1,000,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The increase in Abatement, Control and Compliance will provide enhanced computer support and increases in contractor inspections provided through a grant to the American Association of Retired Persons (AARP).

In 1990, contractor personnel will inspect chemical facilities that use, manufacture or process potentially harmful chemicals to verify that such facilities observe the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA). Section 313 requires facilities to submit annual toxic chemical release forms to EPA and the state in which the facility is located. Such forms list amounts of chemicals released into the environment during the preceding year. Since many such facilities are also subject to the reporting requirements of sections 5, 8 and 13 of the Toxic Substances Control Act (TSCA), the Regions will integrate Title III inspections with TSCA recordkeeping and reporting inspections where possible. The Regions will develop appropriate enforcement actions in response to any violations of Title III detected during these inspections.

In 1990, Headquarters staff will review and update enforcement response policies, compliance monitoring strategies, procedural manuals and guidance relating to section 313 of Title III. Headquarters personnel will also conduct case development activities and will continue to oversee and provide assistance for Regional case development. Other Headquarters activities will include participation with the Office of Toxic Substances in rulemaking, and providing training to Regional and contractor staff.

Headquarters will also manage a grant with the American Association of Retired Persons (AARP) to conduct compliance inspections and provide paralegal case development under SARA Title III. Such contractor support enables the Agency to reach a broader portion of the regulated community. Headquarters will also expand automated data processing (ADP) support for an "expert" computer system to target compliance inspections. The computer system will

TOXIC SUBSTANCES
OPTS Title III Enforcement

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

OPTS Title III					
Enforcement					
Salaries & Expenses	\$315.8	\$421.1	\$424.6	\$512.3	\$87.7
Abatement Control and Compliance		\$1,500.0	\$1,481.2	\$2,481.2	\$1,000.0
TOTAL	\$315.8	\$1,921.1	\$1,905.8	\$2,993.5	\$1,087.7
TOTAL:					
Salaries & Expenses	\$315.8	\$421.1	\$424.6	\$512.3	\$87.7
Abatement Control and Compliance		\$1,500.0	\$1,481.2	\$2,481.2	\$1,000.0
OPTS Title III Enforcement TOTAL	\$315.8	\$1,921.1	\$1,905.8	\$2,993.5	\$1,087.7
PERMANENT WORKYEARS					

OPTS Title III Enforcement	6.8	10.9	10.9	11.0	.1
TOTAL PERMANENT WORKYEARS	6.8	10.9	10.9	11.0	.1
TOTAL WORKYEARS					

OPTS Title III Enforcement	7.8	11.0	11.0	11.0	
TOTAL WORKYEARS	7.8	11.0	11.0	11.0	



PCB and asbestos-in-schools inspections under Section 6. Upon detection of violations, including those originating from state-conducted inspections, the Regional staff developed and prosecuted enforcement cases. The Agency issued administrative orders in 607 cases, issued 898 notices of noncompliance, and referred six civil cases to the Department of Justice.

TOXIC SUBSTANCES ENFORCEMENT GRANTS

1990 Program Request

The Agency requests a total of \$3,200,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,000,000 to allow an additional seven to ten states to participate in the PCB and asbestos enforcement cooperative agreement program. Currently, 22 states participate in this program, which emphasizes compliance monitoring of chemical control rules, particularly for PCBs and asbestos. The increase reflects the program's commitment to building state capabilities, and will support an additional 750 compliance inspections in critical program areas.

1989 Program

In 1989, the Agency is allocating a total of \$2,200,000 for this program, all of which is from the Abatement, Control and Compliance appropriation. These funds support state-conducted toxic substances compliance monitoring programs in 22 states. These state programs focus on Section 6 chemical control rules, particularly PCB and asbestos compliance monitoring.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,271,100 for this program, all of which was from the Abatement, Control and Compliance appropriation. These funds supported state cooperative enforcement agreement programs in 21 states. These states conducted 1022 asbestos-in-schools inspections and 792 PCB inspections.

exercises overall authority in conducting the Agency's laboratory data integrity program. EPA will continue to conduct full-scale audits of completed test studies submitted to the Agency, and inspections of testing laboratories to verify compliance with good laboratory practices. Both the Regions and Headquarters will also prepare and issue notices of noncompliance and civil administrative complaints and will provide technical assistance and support as necessary to the Office of Enforcement and Compliance Monitoring (OECM) in the prosecution of civil and criminal cases.

In 1990 increased extramural funding will be utilized to obtain contractor support to assist in priority compliance areas. These are: sample analysis for PCBs, asbestos, and Section 5 chemicals; inspection support for the section 6 existing chemicals compliance program; case processing support for TSCA subpoena/investigatory reviews and TSCA enforcement reviews, and the development of program guidance and summary materials to assist Regions and states in setting priorities and carrying out necessary compliance activities. The increased funds will be managed by Headquarters personnel in centralized contracts which will provide support for both Headquarters and the Regions in carrying out program functions.

1989 Program

In 1989, the Agency is allocating a total of \$9,797,200 and 183 total workyears for this program, of which \$7,805,100 is from the Salaries and Expenses appropriation and \$1,992,100 is from the Abatement, Control and Compliance appropriation.

The Regions are conducting inspection programs to determine compliance with TSCA rules. The Regions are also providing assistance to firms that are either seeking to comply voluntarily with TSCA requirements, or that wish to take remedial actions to achieve compliance. The Regional offices are preparing and issuing notices of noncompliance and civil administrative orders, and developing and prosecuting cases when compliance is not achieved. Oversight of the cooperative enforcement agreement program, review and approval of PCB landfills and unique-design stationary PCB incinerators, and PCB site disposal monitoring are also responsibilities of the Regional offices. New programs in 1989 include enforcement of AHERA and PCB storage and disposal requirements.

In addition to providing overall program guidance and management, Headquarters is managing the laboratory data integrity program and conducting audits of test studies submitted to the Agency under TSCA testing rules. Headquarters staff are managing the AARP cooperative agreement that supports compliance monitoring inspections under the asbestos-in-schools program. Headquarters is also participating in regulation development directed by the Office of Toxic Substances, and preparing enforcement response policies and compliance monitoring strategies for newly developed regulations.

1988 Accomplishments

In 1988, the Agency obligated a total of \$9,761,200 supported by 179.9 total workyears for this program, of which \$7,762,000 was from the Salaries and Expenses appropriation and \$1,999,200 was from the Abatement, Control and Compliance appropriation.

In 1988 the program conducted compliance inspections, data processing, and scientific review of data audits. The Regional offices conducted compliance inspections in support of existing TSCA rules, placing particular emphasis on

TOXIC SUBSTANCES

Toxic Substances Enforcement

Budget Request

The Agency requests a total of \$14,517,800 and 183.0 total workyears for 1990, an increase of \$2,520,600 and no change in total workyears from 1989. Of the request, \$8,433,500 will be for the Salaries and Expenses appropriation, and \$6,084,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$628,400 in the Salaries and Expenses appropriation, and an increase of \$1,892,200 in the Abatement, Control and Compliance appropriation.

TOXIC SUBSTANCES ENFORCEMENT

1990 Program Request

The Agency requests a total of \$11,317,800 and 183.0 total workyears for this program, of which \$8,433,500 will be for the Salaries and Expenses appropriation and \$2,884,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$628,400 for Salaries and Expenses, an increase of \$892,200 in Abatement, Control and Compliance, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The increase in Abatement, Control and Compliance will support enhanced enforcement and inspection tracking systems.

In 1990, Regional personnel will conduct compliance inspections and provide case development specifically targeted at polychlorinated biphenyl (PCB) disposal sites and broker/transporter/storer facilities, while continuing to emphasize asbestos inspections at local education agencies or asbestos contractors under the Asbestos Hazard Emergency Response Act (AHERA). Inspections in support of the PCB ban, marking and disposal rules will continue to receive strong emphasis. The Regions will also conduct compliance inspections in support of existing Toxic Substances Control Act (TSCA) rules, although many PCB inspections and most asbestos compliance inspections will be conducted either under contract or through cooperative enforcement agreements with state agencies.

Regional staff will participate in the laboratory data integrity program by conducting good laboratory practices (GLP) inspections at laboratories that perform toxic substances testing. The Regional offices will also conduct compliance inspections in support of Section 5 new chemical regulations and Section 8 reporting rules. The total number of Section 5 investigations has been reduced to allow for more detailed and thorough investigations and more time for complex Section 5 technical case reviews. It is anticipated that new programs for monitoring compliance with new Section 6 control regulations on asbestos and hexavalent chromium will also be initiated.

Headquarters manages the national toxic substances enforcement program through guidance to and periodic reviews of Regional programs, including on-site program evaluations. Headquarters also manages a cooperative agreement with the American Association of Retired Persons (AARP) to conduct compliance monitoring inspections in support of the asbestos-in-schools rule, and



TOXIC SUBSTANCES
Toxic Substances Enforcement

PROGRAM	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					

PROGRAM					

Toxic Substances Enforcement					
Salaries & Expenses	\$7,762.0	\$7,808.0	\$7,805.1	\$8,433.5	\$628.4
Abatement Control and Compliance	\$1,999.2	\$2,015.5	\$1,992.1	\$2,884.3	\$892.2
TOTAL	\$9,761.2	\$9,823.5	\$9,797.2	\$11,317.8	\$1,520.6
Toxic Substances Enforcement Grants					
Abatement Control and Compliance	\$2,271.1	\$2,200.0	\$2,200.0	\$3,200.0	\$1,000.0
TOTAL	\$2,271.1	\$2,200.0	\$2,200.0	\$3,200.0	\$1,000.0
TOTAL:					
Salaries & Expenses	\$7,762.0	\$7,808.0	\$7,805.1	\$8,433.5	\$628.4
Abatement Control and Compliance	\$4,270.3	\$4,215.5	\$4,192.1	\$6,084.3	\$1,892.2
TOTAL	\$12,032.3	\$12,023.5	\$11,997.2	\$14,517.8	\$2,520.6
Toxic Substances Enforcement					
PERMANENT WORKYEARS					

Toxic Substances Enforcement	164.4	174.7	173.9	183.0	9.1
TOTAL PERMANENT WORKYEARS	164.4	174.7	173.9	183.0	9.1
TOTAL WORKYEARS					

Toxic Substances Enforcement	179.9	184.3	183.0	183.0	
TOTAL WORKYEARS	179.9	184.3	183.0	183.0	

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	9-1
ENFORCEMENT	
Toxic Substances Enforcement.	9-40
Toxic Substances Enforcement	9-41
Toxic Substances Enforcement Grants.	9-43
OPTS Title III Enforcement.	9-44

Enforcement



in evaluating and making any necessary amendments to the reporting form and associated guidance materials.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,930,800 supported by 29.9 total workyears for this program, of which \$1,898,200 was from the Salaries and Expenses appropriation, \$5,927,600 was from the Abatement, Control and Compliance appropriation, and \$105,000 was from the Hazardous Substance Superfund appropriation.

The Agency made significant progress toward program implementation in 1988. The Agency published the final section 313 emissions inventory rule in January 1988. The first reporting cycle generated 70,000 reports on 1987 emissions. An operational framework to support the information management and dissemination requirements of section 313 was put in place. This framework included a processing center, an Agency database, and a public database arranged through the National Library of Medicine. Provisions were made at the processing center to allow special access to the data prior to availability by computerized systems. The Agency assisted state officials in preparation for public inquiries through development and distribution of informational materials. Outreach activities were conducted through Regional personnel, regional American Association of Retired Persons (AARP) staff, and Headquarters staff. These activities included written guidance, training sessions, workshops, public meetings for Federal, state and local officials, as well as for industry and environmental groups. Twenty petitions were received for Agency decisions to list or delist chemicals and technical support was provided to other EPA offices engaged in Title III activities.

In 1990, the Regions will continue to assist facilities that need help in reporting accurately, including facilities subject to reporting requirements for the first time due to decreasing reporting thresholds set forth in the statute. Regional outreach to the regulated community is an important part of our overall data quality program because annual changes in thresholds for reporting add to the universe of covered facilities. By 1990, facilities will be more aware of section 313 requirements, and will turn to the Regions with increasing frequency for advice and assistance on meeting reporting requirements. In addition, public awareness and availability of the TRI data will create increased demand by state and local governments for assistance in using and understanding the data. Additional resources will enable the Regions to develop state communication networks to provide responses to these inquiries. Headquarters will provide some basic materials and training programs which will aid all users of the section 313 data.

Resources in 1990 will also be used to provide seed money to states under section 28 of TSCA. The seed money will support the use of available information resources in identifying multi-media toxics issues that are most appropriately managed at the state or local level. These one-to-two year grants will support state activities aimed at utilizing information from a variety of exposure and release data bases, including state air and water permits, RCRA manifests and biennial reports, compliance records and toxic chemical specific ambient monitoring data, as well as Title III submissions under section 313. Although the section 313 data provide a unique multi-media emissions database, these data need to be supplemented by information available from one or more of the other databases because of limitations in coverage, data quality and degree of detail reported. States will be encouraged to compare information across databases to identify information inconsistencies and gaps that need to be addressed through additional data collection as well as to build linkages that would facilitate analyses using multiple data resources. These activities will allow states to develop a multi-media perspective on significant sources of risk, and set priorities for in-depth reviews.

1989 Program

In 1989, the Agency is allocating a total of \$10,559,100 supported by 40.9 total workyears for this program, of which \$3,005,000 is from the Salaries and Expenses appropriation and \$7,554,100 is from the Abatement, Control and Compliance appropriation.

In 1989, the first chemical release information gathered under SARA section 313 will be made available to the public, Regions and states. Approximately 150,000 emissions reports are expected in July 1989, 100,000 of which will be processed by the end of the fiscal year. Data quality checks will include computerized edit checks to detect both so-called "fatal" errors (those which prevent data entry) and other serious omissions and errors. The edit checks will generate notices of noncompliance to facilities and lead to subsequent resubmission of corrected data on approximately 25,000 forms. Computerized identification of suspect technical errors will be used to target detailed technical audits on 1,000 reports, and on-site technical audits at 200 facilities.

The Regions will continue to disseminate information and provide training on reporting requirements, concentrating their efforts on facilities subject to reporting requirements for the first time due to decreasing reporting thresholds set forth in the statute. The Regions will also assist Headquarters

TOXIC SUBSTANCES

OPTS Title III

Budget Request

The Agency requests a total of \$13,007,000 supported by 40.9 total workyears for 1990, an increase of \$2,447,900 and no change in total workyears from 1989. Of this amount, \$2,102,900 will be for the Salaries and Expenses appropriation and \$10,904,100 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$902,100 in the Salaries and Expenses appropriation and an increase of \$3,350,000 in the Abatement, Control and Compliance appropriation.

OPTS TITLE III

1990 Program Request

The Agency requests a total of \$13,007,000 supported by 40.9 total workyears for this program, of which \$2,102,900 will be for the Salaries and Expenses appropriation and \$10,904,100 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$902,100 in the Salaries and Expenses appropriation, an increase of \$3,350,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The decrease in Salaries and Expenses reflects the completion of initial efforts, funded in 1989 with monies targeted for this purpose, to process industry data submissions and provide technical guidance to Regional offices. The increase in the Abatement, Control and Compliance appropriation will support grants to states to quality assure the Toxic Release Inventory (TRI) data base, Headquarters data quality efforts initiated in 1989, and data analyses.

In 1990, chemical release information on 1987 and 1988 emissions gathered under section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) will be available to the Regions, states, and the public. A total of 150,000 reports will be processed: 50,000 reports from the July 1989 reporting cycle and 100,000 of the 200,000 reports expected in July 1990. Making these data available through the EPA and public databases, and through other means, continues to be a primary objective of this program. The program will complete a section 313 rule on peak releases, revise the list of chemicals covered, provide technical support to other EPA offices engaged in Title III activities, and review petitions and trade secret claims.

Using additional resources in 1990, EPA will conduct a cost effective data quality program that will continue a multi-level approach to identifying and correcting errors in the data submitted. This process includes automated screening of all forms to identify both obvious errors and questionable responses; generate error notices to firms submitting forms with obvious errors; target detailed followup on questionable responses; and target on-site technical audits. The proposed budget includes both the direct costs of these quality reviews and the cost of re-entering corrected data into the TRI system.



TOXIC SUBSTANCES
OPTS Title III

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

OPTS Title III					
Salaries & Expenses	\$1,898.2	\$3,260.5	\$3,005.0	\$2,102.9	-\$902.1
Abatement Control and Compliance	\$5,927.6	\$7,554.1	\$7,554.1	\$10,904.1	\$3,350.0
Hazardous Substances Superfund	\$105.0				
TOTAL	\$7,930.8	\$10,814.6	\$10,559.1	\$13,007.0	\$2,447.9
TOTAL:					
Salaries & Expenses	\$1,898.2	\$3,260.5	\$3,005.0	\$2,102.9	-\$902.1
Abatement Control and Compliance	\$5,927.6	\$7,554.1	\$7,554.1	\$10,904.1	\$3,350.0
Hazardous Substances Superfund	\$105.0				
TOTAL	\$7,930.8	\$10,814.6	\$10,559.1	\$13,007.7	\$2,447.9
PERMANENT WORKYEARS					

OPTS Title III	28.4	40.3	40.3	40.9	.6
TOTAL PERMANENT WORKYEARS	28.4	40.3	40.3	40.9	.6
TOTAL WORKYEARS					

OPTS Title III	29.9	40.9	40.9	40.9	
TOTAL WORKYEARS	29.9	40.9	40.9	40.9	

workyears, reflecting the establishment of a new Regional presence to coordinate and administer toxic substances regulatory programs.

In 1990, EPA will establish a toxic substances presence in the Regions to enhance implementation of TSCA programs and facilitate the development of state programs. In this decentralization effort, Regional personnel will provide expertise and perspective in implementing Headquarters program policy on the TSCA regulation of polychlorinated biphenyls (PCBs) and encourage and assist states in assuming AHERA and PCB program responsibilities.

The extensive regulation of PCBs generates a significant, ongoing need for guidance and interpretation of existing regulations including disposal requirements. The program will also provide technical and risk assessment support for unanticipated local PCB issues, one example of which is the need to monitor the waste from the shredding of household appliances (fluff) for the presence of PCBs.

The Regions will also encourage states to assume Asbestos Hazard Emergency Response Act (AHERA) program responsibilities; assist states in developing programs for the accreditation of asbestos professionals; review and grant state waiver proposals under AHERA, and provide technical assistance to commercial and public building owners to ensure nationally consistent and sound environmental policies.

1989 Program

No resources are being allocated for this program in 1989. This is a new program in 1990.

1988 Accomplishments

No resources are being allocated for this program in 1988. This is a new program in 1990.

In 1990, EPA will conduct close-out site evaluations on Asbestos School Hazard Abatement Act (ASHAA) loan and grant projects awarded in 1987 and 1988 and monitor projects awarded in 1989. Technical assistance services, including a monthly average of 1,200 assistance contacts by phone, letter, or visits, will be provided through AARP personnel. The Agency will continue to provide technical assistance and guidance documents to assist schools in complying with Asbestos Hazard Emergency Response Act (AHERA) rules, and offer counsel about AHERA requirements to school officials, particularly those with abatement projects that have not been addressed through the ASHAA loan and grant program.

The AHERA schools program will involve a variety of implementation activities, including new training materials for special operations and maintenance activities in schools and a parent/teacher guide to asbestos. Another major activity will be helping states improve and expand their accreditation programs, which they are required to establish under AHERA, and other state management programs affecting schools.

In 1990, the program will complete the final studies in the evaluation of the AHERA schools program and report on the potential applicability of the schools program to commercial and public buildings. The Agency will also use additional resources to carry out other recommendations from the Report to Congress on asbestos in commercial and public buildings. These include: encouraging an increase in the supply of qualified experts through one-time grants to States; thermal system insulation asbestos abatement training, course materials and guidance; and a worker training program for public buildings. EPA public and commercial buildings efforts in 1990 will produce considerable amounts of information regarding methods and strategies for addressing asbestos problems in these buildings.

EPA will continue to jointly sponsor with the Health Effects Institute (HEI) the research program started in 1989. Studies will be conducted to develop improved data on exposure to asbestos in public and commercial buildings and to evaluate various mitigation methods. This program includes funding contributions from a variety of private interests, including current and former product manufacturers, realtors, building owners and managers, mortgage bankers, labor organizations and environmental groups.

1989 Program

This is a new program element in 1990. In 1989 activities to support the ASHAA and AHERA programs were contained in the Asbestos-in-Schools Program Administration and Contractor Certification program elements.

1988 Accomplishments

This is a new program element in 1990. In 1988 activities to support the ASHAA and AHERA programs were contained in the Asbestos-in-Schools Program Administration and Contractor Certification program elements.

REGIONAL TOXICS PROGRAM

1990 Program Request

The Agency requests a total of \$433,500 supported by 10.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$433,500 and 10.0 total

risk. A fee to new chemical submitters to partially defray the cost of these reviews took effect in October 1988; those fees are expected to generate approximately \$4,200,000 in revenues for deposit into the General Fund.

The Agency will promulgate the expedited significant new use procedural rule. Once this more efficient follow-up mechanism is in place, the program will be able to subject more new chemicals to significant new use control. The program will also review and take action on test studies received as a result of section 5(e) consent orders with testing triggers.

In 1989, the Agency will publish final rules covering biotechnology product review and reporting under TSCA. The rules include procedures covering submission of notices for field releases of living microorganisms and a section 5 SNUR for certain microorganisms released to the environment. An increase in notices is expected, reflecting the continued rapid development of the market. The program will take steps to facilitate adequate peer review and public participation in reviews.

1988 Accomplishments

In 1988, the Agency obligated a total of \$20,567,700 supported by 253.6 total workyears for this program, of which \$12,010,700 was from the Salaries and Expenses appropriation and \$8,557,000 was from the Abatement, Control and Compliance appropriation.

Receipt of new chemical notices reached a high of over 3,000; over 700 notices were received in the last month of the fiscal year before the user fee took effect in late September. EPA reviewed public comments on the 1987 proposed procedural rule for expedited significant new use. The Agency also published the final rule to implement a user fee for new chemical reviews.

The Agency reviewed 13 biotechnology notices. These reviews resulted in the issuance of three section 5(e) consent orders. Development of biotechnology rules continued, as did coordination with other Federal agencies, the private sector, and international organizations.

ASBESTOS-IN-BUILDINGS

1990 Program Request

The Agency requests a total of \$6,426,900 supported by 11.0 total workyears for this program of which \$606,900 will be for the Salaries and Expenses appropriation and \$5,820,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$606,900 for the Salaries and Expenses appropriation, an increase of \$5,820,000 for the Abatement, Control and Compliance appropriation, and an increase of 11.0 total workyears. The increase in Salaries and Expenses and workyears reflects the transfer of resources previously shown in the Asbestos-in-Schools Program Administration program. The increase in Abatement, Control and Compliance results from the transfer of resources previously shown under the Asbestos-in-Schools Program Administration and Contractor Certification programs and increased resources to address recommendations made in the 1988 Report to Congress on asbestos in commercial and public buildings.

NEW CHEMICAL REVIEW

1990 Program Request

The Agency requests a total of \$22,500,600 supported by 252.6 total workyears for this program, of which \$13,936,500 will be for the Salaries and Expenses appropriation and \$8,564,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,495,700 for the Salaries and Expenses appropriation, and no change in the Abatement, Control and Compliance appropriation or total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs.

In 1990, we estimate receipt of approximately 3,000 new chemical notices. We will continue to subject new chemicals to a thorough review which includes an emphasis on exposure concerns. About 5 percent of the PMN reviews will result in some type of action to develop data through testing or to reduce risks through formal or voluntary control actions. Testing of new chemicals is usually obtained through section 5(e) consent orders which establish triggers on production levels at which the testing must be performed. Reviews of test data produced by previous testing arrangements will be conducted to determine if further action should be taken on the chemical. The majority of notices will be subject to the user fee rule published in 1988, generating approximately \$4,800,000 in revenues for deposit into the General Fund.

The Agency will fully implement the Significant New Use Program. Significant New Use Rules (SNURs) close the loop on control actions for those new chemicals subject to section 5 consent orders. Whereas a consent order covers only the submitter of the original PMN, a SNUR covers all other potential manufacturers, importers, or processors. These rules also allow the Agency to place controls on certain other chemicals not subject to a section 5(e) order that have the potential to pose problems if not limited to certain production levels or uses. Implementation involves writing and promulgating significant new use notices and, when needed, modifying or revoking the conditions of a specific SNUR and responding to requests for approval of alternative control measures.

By 1990, the number of biotechnology notices requiring review and action by EPA is expected to grow significantly. The majority of this growth will be in notices dealing with deliberate release of engineered microorganisms to the environment through field experiments and commercial use. The review of biotechnology products poses unique risk and exposure concerns. EPA will involve outside experts in the biotechnology review process and will continue efforts to facilitate public understanding of and participation in the review of biotechnology products, particularly those involving field releases.

1989 Program

In 1989, the Agency is allocating a total of \$21,004,900 supported by 252.6 total workyears for this program, of which \$12,440,800 is from the Salaries and Expenses appropriation and \$8,564,100 is from the Abatement, Control and Compliance appropriation.

In 1989, the Agency will continue an effective new chemical review program to ensure that any unreasonable health and environmental risks are addressed before a new chemical enters the marketplace. Approximately 2,800 new chemical notices are expected; about 5 percent of these new chemicals will result in testing to develop needed data or formal or voluntary control actions to reduce

We will expand our risk assessment services to the EPA Regions, drawing significantly on TSCA and Title III section 313 data to address Regional health and ecological issues. We will continue to assist ATSDR with the development of toxicological profiles under SARA section 110.

In 1989, PCBs, asbestos, formaldehyde, and chlorinated solvents will be subject to risk management analysis or action. The PCB notification and manifesting rule will be finalized, enabling the Agency to better track the disposal of PCB wastes and obtain information on the companies that handle and store PCB wastes prior to disposal; a proposed PCB permit revocation rule will establish criteria and procedures for revocation of PCB permits issued under TSCA; the rule regarding PCB petitions for exemptions will be completed; and the Asbestos Ban and Phase Out Rule will be completed. Options selection will be completed on metal cleaning, aerosols and paint stripping uses of chlorinated solvents and on formaldehyde used in wood products. Rulemaking will be initiated for the evaluation of the metals recycling industry and control of PCBs, lead and other contaminants found in both shredded metals and fluff. Headquarters will also continue to maintain and to provide Regional offices with access to the PCB Permit Clearinghouse.

An evaluation of the National Human Adipose Tissue Survey and related blood network will be conducted by the National Academy of Sciences (NAS) in 1989. NAS will evaluate past applications and possible future uses of the Survey, placing it in the context of overall Federal efforts to monitor the general population's exposure to various toxicants. Decisions regarding appropriate activities and funding levels for the Survey in 1990 and beyond will be made after the completion of the NAS evaluation.

1988 Accomplishments

In 1988, the Agency obligated a total of \$12,069,800 supported by 114.8 total workyears for this program, of which 5,784,700 was from the Salaries and Expenses appropriation and \$6,285,100 was from the Abatement, Control and Compliance appropriation.

In 1988, 14 proposed or final information gathering section 8 or section 5(a) rules were promulgated. The section 8(a) CAIR was completed. The Agency received 601 reports under section 8(a) and section 8(d); and 417 section 8(e) or FYI notices. A program to use TSCA data to respond to risk related questions from the Regions was fully implemented. Preliminary risk assessments on 15 chemicals and detailed risk assessments on two chemicals were conducted.

Completed risk management actions included options selection on commercial uses of asbestos; a proposed rule on PCB notification and manifesting; a proposed rule regarding petitions for exemptions for the manufacture, processing or distribution in commerce of PCBs; options selection on dry cleaning uses of chlorinated solvents; a final rule placing additional restrictions and conditions on the use of PCB transformers; and a final rule for deregulating equipment and products contaminated with PCBs at less than the regulatory threshold of 50 parts per million. A PCB Permit Clearinghouse was established to serve as a centralized source of information for the Regions, and guidance was developed for the Regions on permitting of alternative technologies for PCB destruction.

and Compliance appropriation or total workyears. The Salaries and Expenses increase reflects increased personnel and support costs.

In 1990, information gathering and data development activities will continue to provide EPA and others with essential data to support various risk assessment, regulatory and hazard communication functions at both the national and Regional levels. Eleven information gathering rules, including amendments to the Comprehensive Assessment Information Rule (CAIR), will be published. The program will continue to coordinate and publicize collection of the Toxic Substances Control Act (TSCA) information and data bases to increase utility of this unique, unpublished data. By 1990, two years of toxic release data collected under section 313 of SARA Title III is expected to give EPA new insights into possible exposure to existing toxic chemicals. The screening of these data should begin to generate candidates for further information gathering, data development and risk assessment. Headquarters staff will work with Regions to develop cross-media risk screening and assessment methodologies appropriate for evaluating the section 313 data. The Agency will continue to review and take appropriate action on TSCA section 8(e) and voluntary "for your information" (FYI) notices, incorporating the toxic release data wherever appropriate. In addition, EPA will continue to work with the Agency for Toxic Substances and Disease Registry (ATSDR) on SARA section 110 data gaps and play a substantial role in a national and international cooperative effort in the assessment of existing chemicals.

In 1990, priority attention will be given to those existing chemicals for which there is maximum potential for reduction of environmental and general population risks. Work on regulatory options analysis will begin for products found under our TSCA section 4 rule to be significantly contaminated with chlorinated dioxins and furans. The program will also complete the Polychlorinated Biphenyls (PCB) rule proposed in 1989 and evaluate the need for additional rulemakings to address scrapping and salvaging of PCB-contaminated equipment and the disposal of fluff from shredding operations. Implementation of the permit provisions of the asbestos ban/phase out rule will begin and PCB exemption and permit activities will continue. Headquarters will also continue to maintain and to provide Regional offices with access to the PCB Permit Clearinghouse.

Resources have been provided to continue the National Human Adipose Tissue Survey in 1990 at a level which is consistent with past levels of funding, pending the recommendations of an evaluation being conducted by the National Academy of Sciences in 1989.

1989 Program

In 1989, the Agency is allocating a total of \$11,378,500 supported by 110.0 total workyears for this program, of which \$5,473,700 is from the Salaries and Expenses appropriation and \$5,904,800 is from the Abatement, Control and Compliance appropriation.

In 1989, TSCA information gathering activities will continue to generate a significant amount of data on existing chemicals. The Agency will propose or finalize nine information gathering rules. Some of these rules, particularly the section 8(a) CAIR, will provide data collection on multiple chemicals for EPA and other interested Federal agencies. The Existing Chemicals program will screen and quickly disseminate to the appropriate audience section 8(e) and voluntary "for-your-information" notices; we will closely review data that indicate multi-media environmental or high non-occupational exposure concerns.

determine whether data are adequate or whether further review within the Existing Chemical program is warranted. Data from the rule which requires test data on the content of dioxins and furans in products will be evaluated and a determination made as to whether further risk analysis is warranted under the Existing Chemical program.

A procedural rule for expediting test standard modification will be completed. The Agency will also review and update published test guidelines, which are an essential part of any test rule. Following evaluation of a candidate list, two new test guidelines will be completed.

1989 Program

In 1989, the Agency is allocating a total of \$7,501,500 supported by 76.2 total workyears for this program, of which \$4,281,800 is from the Salaries and Expenses appropriation and \$3,219,700 is from the Abatement, Control and Compliance appropriation.

In 1989, the ITC testing program will publish initial testing decisions on seven chemicals from the 21st and 22nd ITC lists. Another 13 testing actions on ITC chemicals will be published, including eight final rules requiring testing to begin.

The non-ITC testing program (for chemicals identified by sources other than the ITC) will include a proposed multi-chemical rule for the Office of Drinking Water to support drinking water advisories and a proposed rule for nonylphenol. Work will begin on assessing the need for chemical testing of former pre-manufacture notice (PMN) chemicals now in full production. A procedural rule for expediting test standard modifications will be proposed. Two new test guidelines will be completed.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,819,600 supported by 80.4 total workyears for this program, of which \$4,544,200 was from the Salaries and Expenses appropriation and \$3,275,400 was from the Abatement, Control and Compliance appropriation.

During 1988, testing actions were completed on a total of 15 chemicals. Initial decisions included three chemicals on the 19th and 20th ITC lists; another 11 testing decisions were published, including 10 final rules and one enforceable consent order. Non-ITC testing actions resulted in a final test rule covering 33 chemicals to support land disposal decisions under the Resource Conservation and Recovery Act (RCRA). One new test guideline was published in 1988. To date, a total of 102 test guidelines have been developed covering 120 methodologies.

EXISTING CHEMICAL REVIEW

1990 Program Request

The Agency requests a total of \$11,973,700 supported by 110.0 total workyears for this program, of which \$6,068,900 will be for the Salaries and Expenses appropriation and \$5,904,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$595,200 for the Salaries and Expenses appropriation, and no change in the Abatement, Control

TOXIC SUBSTANCES

Toxic Substances Strategies

Budget Request

The Agency requests a total of \$48,700,900 supported by 459.8 total workyears for 1990, an increase of \$8,816,000 and 21.0 total workyears from 1989. Of the request, \$25,249,800 will be for the Salaries and Expenses appropriation and \$23,451,100 will be for the Abatement, Control and Compliance appropriation. This is an increase of \$3,053,500 in the Salaries and Expenses appropriation and \$5,762,500 in the Abatement, Control and Compliance appropriation.

CHEMICAL TESTING

1990 Program Request

The Agency requests a total of \$7,366,200 supported by 76.2 total workyears for this program, of which \$4,204,000 will be for the Salaries and Expenses appropriation and \$3,162,200 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of \$77,800 in the Salaries and Expenses appropriation, a decrease of \$57,500 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The decreases reflect a significant reduction in the backlog of the Interagency Testing Committee's (ITC) testing recommendations from previous years.

In 1990, activities related to the Interagency Testing Committee's (ITC) recommendations will include publication of 20 decisions, including eight final actions. Data development will begin on the 25th and 26th ITC lists. Test rules for chemicals identified by processes other than the ITC will include a final multi-chemical rule for the Office of Drinking Water, the first final Superfund Amendments and Reauthorization Act (SARA) section 110 test rule to obtain data on chemicals nominated by the Agency for Toxic Substances and Disease Registry (ATSDR) whose toxicity profiles indicate priority data needs, and a second proposed SARA section 110 test rule. The SARA section 110 chemicals are those found at Superfund sites. Obtaining needed data will facilitate cleanup of the sites and help to protect the public from the potential hazards associated with these chemicals. Section 4 of TSCA is identified in section 110 of SARA as a major mechanism for obtaining these data.

Work will also begin on a multi-chemical rule to cover specific Toxic Release Inventory (SARA Title III section 313) chemicals. This rule will require basic health and environmental data to permit the Environmental Protection Agency (EPA) to determine priorities for further data development and/or risk analysis and risk management.

Data being developed under rules promulgated in prior years will require test program monitoring and review. In many cases testing has been required on a "tiered" basis, with initial testing results leading to decisions either to do additional specified tests or to terminate any further testing. Initial data sets from such tiered testing schemes will be reviewed to determine whether further testing is required. Final studies will be reviewed to

TOXIC SUBSTANCES
Toxic Substances Strategies

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PERMANENT WORKYEARS -----					
Chemical Testing	78.4	77.9	76.2	76.2	
Existing Chemical Review	111.6	110.0	110.0	110.0	
New Chemical Review	246.7	252.6	252.6	252.6	
Asbestos-In-Buildings - Headquarters				11.0	11.0
Regional Toxics Program				10.0	10.0
TOTAL PERMANENT WORKYEARS	436.7	440.5	438.8	459.8	21.0
TOTAL WORKYEARS -----					
Chemical Testing	80.4	77.9	76.2	76.2	
Existing Chemical Review	114.8	110.0	110.0	110.0	
New Chemical Review	253.6	252.6	252.6	252.6	
Asbestos-In-Buildings - Headquarters				11.0	11.0
Regional Toxics Program				10.0	10.0
TOTAL WORKYEARS	448.8	440.5	438.8	459.8	21.0

TOXIC SUBSTANCES
Toxic Substances Strategies

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM					

Chemical Testing					
Salaries & Expenses	\$4,544.2	\$4,155.0	\$4,281.8	\$4,204.0	-\$77.8
Abatement Control and Compliance	\$3,275.4	\$3,725.3	\$3,219.7	\$3,162.2	-\$57.5
TOTAL	\$7,819.6	\$7,880.3	\$7,501.5	\$7,366.2	-\$135.3
Existing Chemical Review					
Salaries & Expenses	\$5,784.7	\$5,320.6	\$5,473.7	\$6,068.9	\$595.2
Abatement Control and Compliance	\$6,285.1	\$5,904.8	\$5,904.8	\$5,904.8	
TOTAL	\$12,069.8	\$11,225.4	\$11,378.5	\$11,973.7	\$595.2
New Chemical Review					
Salaries & Expenses	\$12,010.7	\$12,417.9	\$12,440.8	\$13,936.5	\$1,495.7
Abatement Control and Compliance	\$8,557.0	\$8,837.1	\$8,564.1	\$8,564.1	
TOTAL	\$20,567.7	\$21,255.0	\$21,004.9	\$22,500.6	\$1,495.7
Asbestos-In-Buildings - Headquarters					
Salaries & Expenses				\$606.9	\$606.9
Abatement Control and Compliance				\$5,820.0	\$5,820.0
TOTAL				\$6,426.9	\$6,426.9
Regional Toxics Program					
Salaries & Expenses				\$433.5	\$433.5
TOTAL				\$433.5	\$433.5
TOTAL:					
Salaries & Expenses	\$22,339.6	\$21,893.5	\$22,196.3	\$25,249.8	\$3,053.5
Abatement Control and Compliance	\$18,117.5	\$18,467.2	\$17,688.6	\$23,451.1	\$5,762.5
Toxic Substances Strategies					
TOTAL	\$40,457.1	\$40,360.7	\$39,884.9	\$48,700.9	\$8,816.0

The Agency also administered the ASHAA loan and grant program, and a grant program to help schools conduct inspections and develop management plans under AHERA.

ASBESTOS-IN-SCHOOLS CONTRACTOR CERTIFICATION

1990 Program Request

Funding for this program is being requested under the Asbestos-in-Buildings program. This transfer represents a decrease of \$800,000 in the Abatement, Control and Compliance appropriation from 1989 in this subactivity.

1989 Program

The Agency is allocating a total of \$800,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

The Agency will continue to encourage state management, accreditation and training programs by developing model state legislation for asbestos management and contractor certification and training programs. EPA will provide technical assistance and guidance materials to help state officials meet AHERA requirements and will initiate an evaluation of the AHERA schools program to improve its administration and better determine its applicability to public and commercial buildings.

1988 Accomplishments

The Agency obligated a total of \$5,996,300 for this program, all of which was from the Abatement, Control and Compliance appropriation. These funds were used for 17 grants to states for inspector certification and training programs in compliance with the EPA Model Accreditation Plan for States, published in April 1987. The Agency also collaborated with the State of Maryland and the National Conference of State Legislatures to conduct management plan review training for state officials.

ASBESTOS-IN-SCHOOLS PROGRAM ADMINISTRATION

1990 Program Request

Funding for this program is being requested under the Asbestos-in-Buildings program in 1990. This transfer represents decreases of \$559,200 in the Salaries and Expenses appropriation and \$4,520,000 in the Abatement, Control and Compliance appropriation, and a decrease of 11.0 total workyears in this subactivity from 1989.

1989 Program

The Agency is allocating a total of \$5,079,200 supported by 11.0 total workyears for this program, of which \$559,200 is from the Salaries and Expenses appropriation and \$4,520,000 is from the Abatement, Control and Compliance appropriation.

In 1989, this program will continue to focus on AHERA implementation. Emphasis will be placed on providing compliance assistance and guidance to states and LEAs to implement management plans which schools are required to put into effect by July 1989. Course approvals for accreditation of asbestos abatement inspectors, contractors and others will continue. The Agency will provide technical assistance to school officials and building owners through the American Association of Retired Persons (AARP), including close-out inspections of ASHAA projects from previous years; abatement counseling on unfunded ASHAA applicant projects; and evaluation of potential hazards in non-school buildings. The Agency and General Services Administration (GSA) will continue to work together on improving the management of asbestos abatement projects in Federal buildings.

In addition, this program will provide administrative support to the ASHAA loan and grant program. Under this program, EPA solicits applications from schools, ranks applications in terms of hazard and financial need, and makes award determinations in consultation with the states.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,241,800 supported by 9.8 total workyears for this program, of which \$497,600 was from the Salaries and Expenses appropriation and \$6,744,200 was from the Abatement, Control and Compliance appropriation.

The Agency implemented programs to: (1) assist states and schools in complying with the new AHERA regulatory standards on asbestos inspection, control, and abatement; (2) help states establish AHERA accreditation programs which govern school asbestos inspections, management planning, and response actions; and (3) provide compliance assistance to enable schools to develop appropriate, responsible management plans under AHERA. Further, the Agency provided general technical assistance to school officials and other building owners through the asbestos information and training centers, new guidance and model training course development, and outreach at the Regional level. The Agency developed and submitted a Report to Congress containing recommendations on asbestos in commercial and public buildings. In addition, the Agency and GSA initiated a pilot Asbestos in Federal Buildings project to improve the management of asbestos abatement projects in Federal buildings.

TOXIC SUBSTANCES

Toxic Substances Financial Assistance

Budget Request

The Agency requests no funding in 1990 under this subactivity. All asbestos-related funding for 1990 is now found within the Toxic Substances Strategies subactivity, under the Asbestos-in-Buildings program. This is a decrease of \$50,879,200 and 11.0 total workyears in this subactivity from 1989. Of the decrease, \$559,200 is in the Salaries and Expenses appropriation and \$50,320,000 is in the Abatement, Control and Compliance appropriation.

ASBESTOS-IN-SCHOOLS LOANS AND GRANTS

1990 Program Request

No funds are requested for this program in 1990. This represents a decrease of \$45,000,000 in the Abatement, Control and Compliance appropriation from 1989. The decrease reflects the Agency's decision not to request funds for loans and grants for asbestos abatement in schools. Previous Federal funding has already greatly reduced the need for further Federal intervention. Over \$200,000,000 will have been spent on the asbestos problem in schools through 1989. Furthermore, many states have initiated active asbestos management or contractor accreditation programs for schools and should be able to continue these activities. Hence, the Agency believes these activities should now be the responsibility of state and local governments.

1989 Program

In 1989, the Agency is allocating \$45,000,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

The Agency will administer its fifth loan and grant award cycle under the Asbestos School Hazard Abatement Act (ASHAA) to help local education agencies (LEAs) across the nation to abate asbestos hazards. The Agency will solicit applications from schools, award grants and loans and monitor abatement activities.

1988 Accomplishments

In 1988, the Agency obligated a total of \$37,975,900 for this program, all of which was from the Abatement, Control and Compliance appropriation.

The Agency awarded \$22,600,000 to 103 public school districts and private schools for 226 individual abatement projects, mostly removals. This brings the total for federal assistance from 1984 through 1988 to over \$150,000,000. These funds were provided to approximately 650 LEAs for nearly 1,800 individual abatement projects. When completed, these EPA-funded projects will eliminate approximately 13.3 million exposure hours to students and employees each week. An additional \$15,000,000 was provided in 1988 to states to help schools conduct inspections and develop asbestos management plans under the Asbestos Hazard Emergency Response Act (AHERA).

TOXIC SUBSTANCES
Toxic Substances - Financial Assistance

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PERMANENT WORKYEARS					

Asbestos-In-School - Program Administration	9.4	11.0	11.0		-11.0
TOTAL PERMANENT WORKYEARS	9.4	11.0	11.0		-11.0
TOTAL WORKYEARS					

Asbestos-In-School - Program Administration	9.8	11.0	11.0		-11.0
TOTAL WORKYEARS	9.8	11.0	11.0		-11.0

TOXIC SUBSTANCES
Toxic Substances - Financial Assistance

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

Asbestos-In-School - Abatement Loans and Grants					
Abatement Control and Compliance	\$37,975.9	\$45,000.0	\$45,000.0		-\$45,000.0
TOTAL	\$37,975.9	\$45,000.0	\$45,000.0		-\$45,000.0
Asbestos-In-School - Program Administration					
Salaries & Expenses	\$497.6	\$559.2	\$559.2		-\$559.2
Abatement Control and Compliance	\$6,744.2	\$4,520.0	\$4,520.0		-\$4,520.0
TOTAL	\$7,241.8	\$5,079.2	\$5,079.2		-\$5,079.2
Asbestos-In-School - Contractor Certification Program					
Abatement Control and Compliance	\$5,996.3	\$800.0	\$800.0		-\$800.0
TOTAL	\$5,996.3	\$800.0	\$800.0		-\$800.0
TOTAL:					
Salaries & Expenses	\$497.6	\$559.2	\$559.2		-\$559.2
Abatement Control and Compliance	\$50,716.4	\$50,320.0	\$50,320.0		-\$50,320.0
Toxic Substances - Financial Assistance	TOTAL	\$51,214.0	\$50,879.2	\$50,879.2	-\$50,879.2

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	9-1
ABATEMENT AND CONTROL	
Toxic Substances Financial Assistance	9-21
Asbestos-in-Schools Loans and Grants	9-23
Asbestos-in-Schools Program Administration	9-24
Asbestos-in-Schools Contractor and Inspector Certification	9-25
Toxic Substances Strategies	9-26
Chemical Testing	9-28
Existing Chemical Review	9-29
New Chemical Review.	9-32
Asbestos-in-Buildings.	9-33
Regional Toxics Program.	9-34
OPTS Title III.	9-36

Abatement and Control



1989 Program

In 1989, the Agency is allocating a total of \$9,859,300 supported by 86.2 total workyears for this program, of which \$5,367,900 is from the Salaries and Expenses appropriation and \$4,491,400 is from the Research and Development appropriation. This program is developing test methods in support of TSCA Section 4 guidelines, conducting research on transport, fate and field validation, and developing structure-activity relationships data. Work is also being performed on the development of environmental risk assessment methods, as well as research to determine the environmental effects of genetically engineered organisms.

1988 Accomplishments

In 1988, the Agency obligated a total of \$9,978,800 supported by 85.4 total workyears for this program, of which \$5,555,500 was from the Salaries and Expenses appropriation and \$4,423,300 was from the Research and Development appropriation. In 1988, twenty-one major reports were produced across six research areas, including toxicant effects on biota, genetically manipulated organisms, degradation of toxicants, modeling and extrapolation of environmental data and SAR methods for predicting pollution impacts.

Expenses appropriation and \$5,041,400 will be for the Research and Development appropriation. This represents increases of \$61,400 and \$550,000, respectively, and a decrease of 0.7 total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The increase in the Research and Development appropriation will be used to fund additional biotechnology research and purchase needed equipment for the new Gulf Breeze laboratory. The workyear decrease reflects a consolidation of resources for the Regional Scientists Program within the Interdisciplinary media.

Develop and Validate Test Methods for TSCA Studies. This research will develop and evaluate test methods for assessing the impact of existing chemicals on aquatic biota (freshwater and marine) and on habitat alterations. Tests on bioavailability, on comparisons of hazard ranking and of single species effects (e.g., carcinogenicity) will be improved. Short-term cancer assays will be developed. Such information will directly support development of TSCA Section 4 guidelines.

Perform Ecological Research Including Transport, Fate and Field Validation. Environmental process models will be developed based on toxicant sources, exposure pathways, exposed populations and toxicant levels. Methods will be developed to determine exposure transformation rates and community level effects. Terrestrial investigations will focus on bird studies with regard to toxic effects on immunity and the transfer mechanisms of toxic effects to eggs and offspring. This research will support the TSCA PMN process and Section 4 test rule development.

Develop Structure Activity Relationships Data. This research will develop and evaluate structure activity relationships as predictors of a chemicals fate and biological effects. Results of this research will provide a quick method for predicting effects of new chemicals submitted under TSCA Section 5 by using existing data for chemicals of similar structure.

Perform Research in Biotechnology. This research will develop methods, analytical techniques and testing protocols for estimating survival, fate and effects of genetically altered microbes and the stability within their genetic pool. Methods will be developed for detecting gene persistence and transfer. This information will aid OTS in reviewing PMN applications for products of biotechnology.

Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. Research efforts will provide mathematical integration of exposure and effects research. Predictive models and methodology will be subjected to field testing. Ecosystem impacts and recovery potential will be determined. These environmental risk assessment methods will substantially enhance the Agency's ability to regulate chemicals under Sections 4 and 5 of TSCA.

Provide Support Services for TSCA Activities. Environmental process efforts will support OTS on complex problems associated with the evaluations of PMN chemicals, including products of biotechnology.

costs. The increase in the Research and Development appropriation will be used to fund additional research on asbestos, SARA Title III, and biotechnology.

Perform Engineering Research in Support of TSCA. Predictive techniques for potential toxic releases and exposures from processing and manufacturing new chemicals will be developed. Research will focus on priority dye-class compounds, as determined by the Interagency Testing Committee, for improving their treatability in wastewater systems with respect to their toxicity.

Perform Research in Biotechnology. A comprehensive risk-management model will be developed by completing several industrial-process and worker personal protection equipment evaluations to support the TSCA PMN review process. An effort will be initiated to investigate operator/process equipment interactions and actual plant data on the source and approximate magnitude of release and worker exposure will be acquired. Evaluation of this work supports the TSCA requirement to evaluate biotechnology products for workplace exposure during manufacturing and processing.

Perform Research on Community Right-to-Know Issues (SARA Title III). Industrial scenarios where current release estimation is very difficult and uncertain will be identified. These scenarios will be analyzed in an attempt to develop three levels of estimation certainty based on the amount of information known.

Perform Asbestos Research. Research efforts will focus on identifying factors that must be included in the design of abatement in tall buildings, improving protocols for abatement equipment and materials and evaluating decontamination techniques.

1989 Program

In 1989, the Agency is allocating a total of \$2,334,500 supported by 11.0 total workyears for this program, of which \$623,400 is from the Salaries and Expenses appropriation and \$1,711,100 is from the Research and Development appropriation. The 1989 program is developing information on release, exposure and control measures for new and existing chemicals in the workplace, particularly genetically engineered organisms.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,619,400 supported by 9.5 total workyears for this program, of which \$568,700 was from the Salaries and Expenses appropriation and \$2,050,700 was from the Research and Development appropriation. In 1988, the final clean-up phase of abatement at twenty schools was evaluated and revealed that the areas were determined to be cleared using transmission electron microscopy (TEM).

ENVIRONMENTAL PROCESSES AND EFFECTS

1990 Program Request

The Agency requests a total of \$10,470,700 supported by 85.5 total workyears for this program, of which \$5,429,300 will be for the Salaries and

environmental contaminants which are suspect toxicants. Methods will be developed to directly measure genetic damage in humans and to define the health effects of such damage. Efforts will also be initiated to use laboratory estimates of molecular dose for epidemiology studies of humans highly exposed to toxic agents.

Develop Structure Activity Relationships Data. Methods for predicting enzymatic, mutagenic, carcinogenic and other biological activities from molecular structure of chemicals will be developed using pattern recognition and statistical and thermodynamic techniques. Research results provide a rapid method for predicting effects of new chemicals based on known data for chemicals of similar structure.

Perform Research in Biotechnology. Potential dispersal capability of bioengineered organisms will be studied, along with their potential health hazards. Health studies will compare the effects of these organisms and naturally occurring strains on mammalian gut flora. Research will also be initiated to determine the interaction on invertebrate viruses with human and other vertebrate cells. This research supports the PMN review process for biotechnology products.

1989 Program

In 1989, the Agency is allocating a total of \$10,784,700 supported by 62.6 total workyears for this program, of which \$3,428,400 is from the Salaries and Expenses appropriation and \$7,356,300 is from the Research and Development appropriation. The 1989 program is developing test methods in support of TSCA Section 4 test guidelines, conducting research on extrapolation, biological markers, and structure activity relationships, and assessing potential health effects from genetically engineered organisms. In 1989, \$2,000,000 of Research and Development funds will be used by the Health Effects Institute (HEI) to conduct asbestos research.

1988 Accomplishments

In 1988, the Agency obligated a total of \$8,549,200 supported by 64.0 total workyears for this program, of which \$3,231,000 was from the Salaries and Expenses appropriation and \$5,318,200 was from the Research and Development appropriation. Twenty-three reports were issued in the following research areas: methods development; biomarkers; structure activity relationships; and biotechnology.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$2,950,400 supported by 11.0 total workyears for this program, of which \$636,900 will be for the Salaries and Expenses appropriation and \$2,313,500 will be for the Research and Development appropriation. This represents an increase of \$13,500 in the Salaries and Expenses appropriation and \$602,400 in the Research and Development appropriation. There is no change in total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support

1989 Program

In 1989, the Agency is allocating a total of \$4,900,100 supported by 25.1 total workyears for this program, of which \$1,479,700 is from the Salaries and Expenses appropriation and \$3,420,400 is from the Research and Development appropriation. The 1989 program is continuing support for exposure monitoring, developing analytical methods and providing quality assurance support and standard reference materials. Factors important in the dispersal of genetically engineered organisms are being identified and described.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,799,300 supported by 24.1 total workyears for this program, of which \$1,447,700 was from the Salaries and Expenses appropriation and \$3,351,600 was from the Research and Development appropriation. Biological monitoring methods and biomarkers were evaluated for their possible use in human monitoring studies. Consumer product models and initial comparisons of volatile organic compounds (VOCs) were completed.

HEALTH EFFECTS

1990 Program Request

The Agency requests a total of \$9,031,900 supported by 62.4 total workyears for this program, of which \$3,525,600 will be for the Salaries and Expenses appropriation and \$5,506,300 will be for the Research and Development appropriation. This represents an increase of \$97,200 in the Salaries and Expenses appropriation and a decrease of \$1,850,000 in the Research and Development appropriation and a decrease of 0.2 total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The decrease in the Research and Development appropriation reflects a shift of funding for asbestos research conducted by the Health Effects Institute (HEI) from ORD to OPTS. The workyear decrease reflects a consolidation of resources for the Regional Scientist Program within the Interdisciplinary media.

Develop and Validate Test Methods for TSCA Studies. Health research will focus on developing bioassay methods for predicting non-cancer endpoints, with particular emphasis on neurotoxicity, immunotoxicity and developmental toxicity. These methodologies are used to evaluate industry submitted data on health effects of new chemicals to provide test guidelines which ensure that the data is accurate, reproducible and consistent.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. This research will provide improved methods for extrapolation from animal data to assess human health risks. This research provides an important component to the risk assessment process. Emphasis will be placed on target organ dosimetry, including oral, dermal and inhalation routes of exposure, to determine if the equivalent doses reaching the target site produce equivalent effects.

Provide Information On Special Human Data Needs. Research will examine the application of biological markers to human populations groups exposed to

Expenses appropriation and \$400,000 in the Research and Development appropriation and a decrease of 0.1 total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The increase in the Research and Development appropriation will be used to fund additional research on asbestos monitoring and for implementation of SARA Title III. The workyear reduction reflects a consolidation of resources for the Regional Scientists Program within the Interdisciplinary media.

Develop and Validate Test Methods for TSCA Studies. Biological and chemical techniques will be developed and evaluated to identify and quantify pollutants in both humans and the environment. This information provides the exposure component for conducting risk assessments. New efforts will study infrared spectra to develop and validate effective and economical analytical and biological methodologies for routine measurements.

Perform Health Research on Biological Markers, Dosimetry and Extrapolation. Existing genetic, immunological and biochemical biomarkers will be pilot tested for suitability as markers of exposure to pollutants. The use of DNA protein adducts as biomarkers will be explored. Biomarkers will provide a quick, accurate, and cost-effective means to detect the presence of toxicants in body tissue which cannot currently be detected using conventional monitoring methods.

Perform Exposure Monitoring Research. Research in this area will develop monitoring systems and models to estimate human exposure to pollutants via multiple pathways. Statistical survey procedures and data analysis techniques will be used to produce predictive techniques in microenvironments and categorize human activity patterns. This research will improve exposure assessment capabilities for regulatory efforts.

Perform Research in Biotechnology. Monitoring procedures and methods for sampling for genetically engineered microorganisms (GEMs) will be standardized for monitoring routine releases of GEMs into the environment. Bioaerosol formation will be studied and half-life determinations will be performed.

Provide Support Services for TSCA Activities. Monitoring and quality assurance support will continue for the production of reference standards and quality assurance reagents. Quality assurance guidelines will be produced for data management procedures for bioassays. Computerized approaches for risk evaluation will be tested by application of geographic information system (GIS) technology to existing exposure data collected by the program office.

Perform Research on Community Right-to-Know Issues (SARA Title III). Validated sampling and analytical methods will be provided to support environmental and exposure monitoring investigations of chemical releases of SARA Title III chemicals. Reference standards and quality assurance materials will be synthesized or procured and added to the Agency's Hazardous Materials and Toxic Chemical repository. Research will be conducted to use GIS technology to model environmental pollution from multimedia emission sources.

Perform Asbestos Research. Research will support the implementation of the Asbestos Hazard Emergency Response Act (AHERA) by developing sampling and analysis protocols to monitor exposure to airborne asbestos.

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$177,600 supported by 2.0 total workyears for this program, of which \$122,000 will be for Salaries and Expenses appropriation and \$55,600 will be for the Research and Development appropriation. This represents increases of \$14,900 in the Salaries and Expenses appropriation and \$48,400 in the Research and Development appropriation and no change in total workyears. The increase in the Salaries and Expenses appropriation reflects increased personnel and support costs. The increase in the Research and Development appropriation will be used to fund new research in support of SARA Title III implementation.

Provide Support Services for TSCA Activities. Scientific assessment support will be provided for preparation, consultation and review of OTS generated assessments of cancer, mutagenicity, adverse reproductive/developmental effects, and exposure. These activities will support decision making under TSCA (existing chemicals program, PMN review, and test guidelines and test rule development).

Perform Research on Community Right-to-Know Issues (SARA Title III). Chemical profiles will be prepared and installed into the Agency's Integrated Risk Information System (IRIS) to provide information to various governmental agencies and the public on the health effects of chemicals released into the environment.

1989 Program

In 1989, the Agency is allocating a total of \$114,300 supported by 2.0 total workyears for this program, of which \$107,100 is from the Salaries and Expenses appropriation and \$7,200 is from the Research and Development appropriation. The 1989 program is providing support for preparation and review of risk and exposure assessments and developing protocols for environmental risk assessments.

1988 Accomplishments

In 1988, the Agency obligated a total of \$427,800 supported by 3.9 total workyears for this program, of which \$219,800 was from the Salaries and Expenses appropriation and \$208,000 was from the Research and Development appropriation. In 1988, a review of 2,4-TDA was conducted and assistance was provided for data review on reproductive and developmental toxicity of diglymes and phenol.

MODELING, MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$5,375,400 supported by 25.0 total workyears for this program, of which \$1,555,000 will be for the Salaries and Expenses appropriation and \$3,820,400 will be for the Research and Development appropriation. This represents increases of \$75,300 in the Salaries and

Objective 5. Perform Engineering Research in Support of TSCA. This research focuses on the development of models to predict the release of and exposure to new and existing chemicals. The program addresses those classes of chemicals for which the Agency does not have adequate information on the degree to which existing control systems limit their release, resulting in more effective Pre-Manufacture Notification (PMN) decisions.

Objective 6. Perform Exposure Monitoring Research. This research develops methods and evaluates data bases and statistical tools to improve exposure monitoring. Multimedia monitoring methods and data analysis techniques are designed and tested to characterize human exposure to chemicals of concerns.

Objective 7. Develop Structure Activity Relationships Data. These research efforts develop predictive methods (structure activity relationships) to provide a tool for determining whether new chemicals pose unreasonable risk or require further testing. Structure activity relationships data are important for reviewing and screening PMN chemicals under Section 5 of TSCA. The findings and techniques established by this research will be used to select appropriate toxicity tests, to document test results, to develop fate and effects data bases, and to provide the modeling means to predict toxicity.

Objective 8. Perform Research in Biotechnology. Research in this area develops methods to assess the potential health and environmental hazards of biotechnology products. Methods are also being developed to monitor, contain and destroy genetically engineered organisms from releases and manufacturing processes.

Objective 9. Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols. Research in this area focuses on development of methodologies and models to determine risks posed to ecosystems by exposure to environmental pollutants. The program is currently developing environmental risk assessment protocols for both aquatic and terrestrial systems which will be used in evaluating risks from both new and existing chemicals.

Objective 10. Provide Support Services for TSCA Studies. This research provides support for risk and exposure assessments, quality assurance, dissemination of reference standards and quality assurance reagents as well as expert consultation on problems associated with the evaluation of PMN chemicals and other toxic substances.

Objective 11. Perform Research on Community Right-to-Know Issues (SARA Title III). This new research effort will evaluate and validate emission estimation techniques and monitoring methods to be used by industry and the Office of Toxic Substances in support of the Community Right-to-Know provisions of the Superfund Amendments Reauthorization Act (SARA).

Objective 12. Perform Asbestos Research. Research in this area focuses on testing and evaluating asbestos abatement and control technologies and on development of sampling techniques for asbestos in support of the Asbestos Hazard Emergency Response Act (AHERA).

TOXIC SUBSTANCES

Toxic Substances Research

Budget Request

The Agency requests a total of \$28,006,000 supported by 185.9 total workyears for 1990, an increase of \$13,100 and a decrease of 1.0 workyear from 1989. Of the request, \$11,268,800 will be for the Salaries and Expenses appropriation and \$16,737,200 will be for the Research and Development appropriation, an increase of \$262,300 and a decrease of \$249,200, respectively.

Program Objectives

The Toxic Substances research program supports the Office of Toxic Substances (OTS) by providing the scientific tools and supporting information needed to implement the Toxic Substances Control Act (TSCA), the Asbestos Hazard Emergency Response Act (AHERA) and Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA).

Objective 1. Develop and Validate Test Methods for TSCA Studies. This research develops and validates health and environmental testing protocols to be incorporated into TSCA Section 4 guidelines, risk assessment methods, and analytical methods for identifying and quantifying environmental pollutants.

Objective 2. Perform Health Research on Biological Markers, Dosimetry and Extrapolation. This effort develops methods for extrapolating from high to low doses between mammalian species to enhance risk assessment predictability and capability. Research also focuses on developing biomonitoring techniques and applying biochemical indicators of exposure and effects to the study of populations exposed to toxicants.

Objective 3. Provide Information on Special Human Data Needs. This activity focuses on investigations of human populations exposed to environmental pollutants. This research will help determine whether biological indicators of dose and/or effects are related to environmental levels of exposure and if they are correlated with adverse effects measured by traditional methods. This research provides an important component to the Agency's overall ability to accurately estimate risks from exposure to chemicals and make regulatory decisions under TSCA.

Objective 4. Perform Ecological Research Including Transport, Fate, and Field Validation. This research focuses on developing and conducting exposure and hazard assessments of chemicals in water, air, and multimedia environments. This work is conducted in response to the TSCA requirement that the Agency take into account ecological risks when making regulatory decisions. Work focuses on inclusion of identified transport and transformation processes, pathways of exposure, population characteristics, environmental features and hazard assessment techniques.



Objective 10: Provide Support Services for TSCA Studies

- 1990: o Guidelines for use of human exposure model in regulatory review and report on production of reference materials for quality control (Monitoring)
- 1989: o Annual report on production of quality control materials and asbestos for routine monitoring procedures (Monitoring)
- 1988: o Annual report on the asbestos audit program (Monitoring)

- 1989: o Report on advanced development of methodologies for estimating protective clothing performance for the PMN review process (Engineering)
- 1988: o Study of workplace exposure in the polymer processing industry (Engineering)

Objective 6: Perform Exposure Monitoring Research

- 1990: o Interim report on blood/breath monitoring for total human exposure to toxic pollutants (Monitoring)
- o Progress report on modeling pollutant sources and human activity patterns associated with exposure to toxic pollutants (Monitoring)

Objective 7: Develop Structure Activity Relationships Data

- 1990: o Report documenting application of expert systems for predicting reactivity parameters for PMN Chemicals (Environmental Processes)
- 1989: o Final report on SAR methods for predicting metabolism from chemical structure (Environmental Processes)

Objective 8: Perform Research In Biotechnology

- 1990: o Interim report to assess methods of recombinant bacteria in terrestrial ecosystems (Environmental Processes)
- o Report on the survival, persistence and expression of genetically engineered viruses in vitro and in vivo under laboratory conditions (Health)
- 1989: o Report: Fate and survival of altered microbes and genetic material in the terrestrial environment (Environmental Processes)
- 1988: o Guidelines for monitoring releases of microbes (Monitoring)

Objective 9: Perform Studies on Ecotoxicity and Develop Environmental Risk Assessment Protocols

- 1990: o Users manual update of stratified lake transport model for risk assessment (Environmental Processes)
- 1989: o Report on the comparison of laboratory microcosms and natural pond responses to Dursban (Environmental Processes)
- 1988: o Report documenting the coupled plant-soil model and software for predicting the fate of xenobiotic chemicals in terrestrial plants (Environmental Processes)

TOXIC SUBSTANCES

Toxic Substances Research

Principal Outputs by Objective

Objective 1: Develop and Validate Test Methods in Support of TSCA Studies

- 1990: o Progress report on determining dose for small aquarium animals fish used in chronic bioassays (Environmental Processes)
- o Report on chemometric research (Monitoring)
- 1989: o Report: Carcinogenicity of the widely used herbicide alachlor in freshwater and marine fishes (Environmental Processes)
- 1988: o Evaluation of the sensitivity of a screening procedure with specific reproductive toxins (Health)

Objective 2: Perform Research on Biological Markers, Dosimetry and Extrapolation

- 1990: o Evaluation of biological models for prediction of tumorigenesis for asbestos and other mineral fibers (Health)
- o Evaluation of potential use for biological markers in human exposure monitoring studies (Monitoring)
- 1988: o Structure activity correlation of the reproductive effects of diazo dyes administered in utero (Health)

Objective 3: Provide Information on Special Human Data Needs

- 1989: o Report on the effects of asbestos exposure on teachers (Health)

Objective 4: Perform Ecological Research Including Transport, Fate and Field Validation

- 1990: o Report describing structure activity relationships (SAR) in uptake of chemicals by plants (Environmental Processes)
- 1989: o Internal report on transfer mechanisms of chemicals to eggs and offspring of avians (Environmental Processes)

Objective 5: Perform Engineering Research in Support of TSCA

- 1990: o Report on the feasibility of a testing/certification program for asbestos equipment and materials (Engineering)

TOXIC SUBSTANCES
Toxic Substances Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

PERMANENT WORKYEARS					

Scientific Assessment - Toxic Substances	3.9	4.0	2.0	2.0	
Monitoring Systems & Quality Assurance - Toxic Substances	22.7	25.1	25.1	25.0	-.1
Health Effects - Toxic Substances	60.5	61.6	62.6	62.4	-.2
Environmental Engineering & Technology - Toxic Substances	8.8	11.0	11.0	11.0	
Environmental Processes & Effects - Toxic Substances	81.2	85.6	86.2	85.5	-.7
TOTAL PERMANENT WORKYEARS	177.1	187.3	186.9	185.9	-1.0
TOTAL WORKYEARS					

Scientific Assessment - Toxic Substances	3.9	4.0	2.0	2.0	
Monitoring Systems & Quality Assurance - Toxic Substances	24.1	25.1	25.1	25.0	-.1
Health Effects - Toxic Substances	64.0	61.6	62.6	62.4	-.2
Environmental Engineering & Technology - Toxic Substances	9.5	11.0	11.0	11.0	
Environmental Processes & Effects - Toxic Substances	85.4	85.6	86.2	85.5	-.7
TOTAL WORKYEARS	186.9	187.3	186.9	185.9	-1.0

TOXIC SUBSTANCES
Toxic Substances Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM					

Scientific Assessment -					
Toxic Substances					
Salaries & Expenses	\$219.8	\$239.1	\$107.1	\$122.0	\$14.9
Research & Development	\$208.0	\$208.0	\$7.2	\$55.6	\$48.4
TOTAL	\$427.8	\$447.1	\$114.3	\$177.6	\$63.3
Monitoring Systems &					
Quality Assurance -					
Toxic Substances					
Salaries & Expenses	\$1,447.7	\$1,505.3	\$1,479.7	\$1,555.0	\$75.3
Research & Development	\$3,351.6	\$3,423.6	\$3,420.4	\$3,820.4	\$400.0
TOTAL	\$4,799.3	\$4,928.9	\$4,900.1	\$5,375.4	\$475.3
Health Effects - Toxic					
Substances					
Salaries & Expenses	\$3,231.0	\$3,479.1	\$3,428.4	\$3,525.6	\$97.2
Research & Development	\$5,318.2	\$7,356.3	\$7,356.3	\$5,506.3	-\$1,850.0
TOTAL	\$8,549.2	\$10,835.4	\$10,784.7	\$9,031.9	-\$1,752.8
Environmental					
Engineering &					
Technology - Toxic					
Substances					
Salaries & Expenses	\$568.7	\$626.1	\$623.4	\$636.9	\$13.5
Research & Development	\$2,050.7	\$1,712.6	\$1,711.1	\$2,313.5	\$602.4
TOTAL	\$2,619.4	\$2,338.7	\$2,334.5	\$2,950.4	\$615.9
Environmental Processes					
& Effects - Toxic					
Substances					
Salaries & Expenses	\$5,555.5	\$5,309.5	\$5,367.9	\$5,429.3	\$61.4
Research & Development	\$4,423.3	\$4,460.9	\$4,491.4	\$5,041.4	\$550.0
TOTAL	\$9,978.8	\$9,770.4	\$9,859.3	\$10,470.7	\$611.4
TOTAL:					
Salaries & Expenses	\$11,022.7	\$11,159.1	\$11,006.5	\$11,268.8	\$262.3
Research & Development	\$15,351.8	\$17,161.4	\$16,986.4	\$16,737.2	-\$249.2
Toxic Substances Research	TOTAL \$26,374.5	\$28,320.5	\$27,992.9	\$28,006.0	\$13.1



ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>TOXIC SUBSTANCES</u>	9-1
<u>RESEARCH AND DEVELOPMENT</u>	
Toxics Substances Research.	9-7
Scientific Assessment.	9-14
Monitoring Systems and Quality Assurance	9-14
Health Effects	9-16
Environmental Engineering and Technology	9-17
Environmental Processes and Effects.	9-18

Research and Development

TOXIC SUBSTANCES (continued)

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase+ Decrease- 1990 vs. 1989
PROGRAM ACTIVITIES				
Incremental Outputs				
<u>Title III</u>				
TRI Forms Received.....	71,109	150,000	200,000	+50,000
TRI Forms Processed.....	71,109	100,000	150,000	+50,000
Notices of Noncompliance....	3,000	30,000	35,000	+5,000
Receipt of Corrected Forms..	--	28,000	35,000	+7,000
Petitions Received.....	20	10	10	--
On-Site Technical Audits....	--	200	100	-100
Suspect Tech. Data Review...	--	1,000	1,000	--
Rulemakings.....	1	0	1	+1
<u>Asbestos-in-Schools Loans and Grants</u>				
Abatement Projects Funded...	226	450	--	--
Exposure Hours Reduced.....	2,000,000	3,300,000	--	--
<u>Asbestos-in-Buildings*</u>				
Abatement Projects Closed out	320	590	600	+10
State Programs Developed....	11	11	16	+5
<u>Enforcement Actions</u>				
Title III Inspections.....	153	735	960	+225
Title III Administrative Orders	0	265	380	+115
Laboratory Inspections.....	10	10	15	+5
Test Study Audits.....	27	47	73	+26
Inspections, Sec. 5.....	330	306	200	-106
Inspections, Sec. 6				
PCB Inspections**.....	1,935	1,800	2,175	+375
Asbestos Inspections***.....	1,614	2,180	2,555	+375
Inspections, Sec. 8.....	185	100	100	--

*1988 and 1989 outputs were accomplished under Asbestos-in-Schools Program Administration and Contractor Certification programs, which are merged in 1990 into the Asbestos-in-Buildings program.

**Includes Federal and state inspections

***Includes Federal, state and contractor inspections

TOXIC SUBSTANCES

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase+ Decrease- 1990 vs. 1989

PROGRAM ACTIVITIES				
Incremental Outputs				
<u>Existing Chemical Review</u>				
Section 8(e), FYI's Received	417	400	400	--
Section 8 Reports	601	1,050	1,320	+270
Section 8 and 5(a) Rules.....	14	9	11	+2
Preliminary Risk Assessments	15	10	20	+10
Detailed Risk Assessments....	2	2	6	+4
List 2 Inerts Screened.....	15	35	50	+15
PCB Disposal Permits.....	12	12	12	--
Option Selections.....	2	3	4	+1
Rulemakings.....	4	4	1	-3
Section 9 Referrals.....	0	1	1	--
PCB Exemptions	12	10	10	--
Asbestos Ban Exemptions.....	--	15	15	--
<u>New Chemical Review</u>				
Rulemakings.....	1	3	0	-3
New Chemical Submissions.....	3,039	2,800	3,000	+200
New Chemical Control Actions	180	140	140	--
Biotechnology Notices.....	13	65	155	+90
Biotechnology Control Actions	3	15	30	+15
New Chemical SNURS.....	--	185	185	--
Receipt of Test Data.....	50	30	30	--
Bona Fide Submissions.....	387	500	600	+100
Commencement Notices.....	1,239	1,200	1,200	--
<u>Chemical Testing</u>				
ITC Testing Actions.....	14	20	20	--
Non-ITC Testing Actions.....	1	2	3	+1
Test Guidelines.....	1	2	2	--
Test Standard Modifications..	30	60	75	+15
Interim Test Program Reviews	3	7	12	+5
Final Test Program Reviews	4	12	17	+5

Program Management

SECTION TAB

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT AND SUPPORT</u>	11-1
<u>PROGRAM MANAGEMENT</u>	
Program Management	11-6
Program Management - Air and Radiation	11-9
Program Management - Water	11-10
Program Management - Enforcement and Compliance Monitoring . . .	11-10
Program Management - External Affairs.	11-11
Program Management - Pesticides and Toxic Substances	11-12
Program Management - General Counsel	11-13
Program Management - Research and Development.	11-13
Program Management - Solid Waste and Emergency Response.	11-14

PROGRAM MANAGEMENT
Program Management

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

PROGRAM					

Program Management - Air And Radiation Salaries & Expenses	\$3,026.6	\$3,037.2	\$2,930.7	\$3,005.7	\$75.0
TOTAL	\$3,026.6	\$3,037.2	\$2,930.7	\$3,005.7	\$75.0
Program Management - Water Salaries & Expenses	\$2,707.7	\$2,863.2	\$2,863.2	\$3,160.8	\$297.6
TOTAL	\$2,707.7	\$2,863.2	\$2,863.2	\$3,160.8	\$297.6
Program Management - Enforcement And Compliance Monitoring Salaries & Expenses	\$461.8	\$478.9	\$478.9	\$538.1	\$59.2
TOTAL	\$461.8	\$478.9	\$478.9	\$538.1	\$59.2
Program Management - External Affairs Salaries & Expenses	\$667.8	\$718.1	\$717.4	\$779.7	\$62.3
TOTAL	\$667.8	\$718.1	\$717.4	\$779.7	\$62.3
Program Management - Pesticides and Toxic Substances Salaries & Expenses	\$2,369.7	\$2,839.6	\$3,079.8	\$3,008.7	-\$71.1
TOTAL	\$2,369.7	\$2,839.6	\$3,079.8	\$3,008.7	-\$71.1
Program Management - General Counsel Salaries & Expenses	\$479.4	\$489.8	\$489.8	\$518.3	\$28.5
TOTAL	\$479.4	\$489.8	\$489.8	\$518.3	\$28.5
Program Management - Research & Development Salaries & Expenses	\$4,683.0	\$4,797.3	\$5,715.0	\$5,462.5	-\$252.5
TOTAL	\$4,683.0	\$4,797.3	\$5,715.0	\$5,462.5	-\$252.5

PROGRAM MANAGEMENT
Program Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Program Management - Solid Waste and Emergency Response Salaries & Expenses	\$1,860.9	\$1,619.2	\$1,619.2	\$1,742.0	\$122.8
TOTAL	\$1,860.9	\$1,619.2	\$1,619.2	\$1,742.0	\$122.8
TOTAL: Salaries & Expenses	\$16,256.9	\$16,843.3	\$17,894.0	\$18,215.8	\$321.8
Program Management TOTAL	\$16,256.9	\$16,843.3	\$17,894.0	\$18,215.8	\$321.8
PERMANENT WORKYEARS					

Program Management - Air And Radiation	48.1	47.8	44.6	44.6	
Program Management - Water	42.3	45.9	45.9	45.9	
Program Management - Enforcement And Compliance Monitoring	7.0	9.0	9.0	9.0	
Program Management - External Affairs	10.6	11.7	11.7	11.7	
Program Management - Pesticides and Toxic Substances	35.7	42.9	42.8	42.6	-.2
Program Management - General Counsel	9.5	8.2	8.2	10.5	2.3
Program Management - Research & Development	51.3	56.2	62.5	62.4	-.1
Program Management - Solid Waste and Emergency Response	28.5	28.2	28.2	28.0	-.2
TOTAL PERMANENT WORKYEARS	233.0	249.9	252.9	254.7	1.8

PROGRAM MANAGEMENT
Program Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
TOTAL WORKYEARS					

Program Management - Air And Radiation	51.0	47.8	44.6	44.6	
Program Management - Water	47.0	45.9	45.9	45.9	
Program Management - Enforcement And Compliance Monitoring	8.0	9.0	9.0	9.0	
Program Management - External Affairs	11.0	11.7	11.7	11.7	
Program Management - Pesticides and Toxic Substances	38.4	42.9	42.8	42.6	-.2
Program Management - General Counsel	9.9	10.5	10.5	10.5	
Program Management - Research & Development	52.7	56.2	62.5	62.4	-.1
Program Management - Solid Waste and Emergency Response	30.4	28.2	28.2	28.0	-.2
TOTAL WORKYEARS	248.4	252.2	255.2	254.7	-.5

MANAGEMENT AND SUPPORT

Program Management

Budget Request

The Agency requests a total of \$18,215,800 supported by 254.7 workyears for 1990, an increase of \$321,800 and a decrease of .5 total workyears from 1989. All of the request is for the Salaries and Expenses appropriation.

PROGRAM MANAGEMENT - AIR AND RADIATION

1990 Program Request

The Agency requests a total of \$3,005,700 supported by 44.6 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$75,000 in the Salaries and Expenses appropriation and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. Air and radiation program management will focus on implementation of the new Indoor Radon Abatement Act, the Clean Air Act Amendments of 1977, the Atomic Energy Act, the Uranium Mill Tailings Radiation Control Act, and the Superfund Amendments and Reauthorization Act, and on development of major policies and decisions related to these acts.

1989 Program

In 1989 the Agency is allocating a total of \$2,930,700 supported by 44.6 total workyears for this program, all of which is from the Salaries and Expenses appropriation. This program provides management support for implementation of the new Indoor Radon Abatement Act, the Clean Air Act, the Atomic Energy Act, the Uranium Mill Tailings Radiation Control Act, and the Superfund Amendments and Reauthorization Act. Key activities include: executive management, program planning and analysis, resource management, and budget formulation. The program also provides administrative support to Office of Air and Radiation (OAR) components.

1988 Accomplishments

In 1988 the Agency obligated \$3,026,600 for this program supported by 51.0 workyears, all of which was from the Salaries and Expenses appropriation. The program provided executive management, program planning and analysis, and budget and administrative support to OAR offices.

PROGRAM MANAGEMENT - WATER

1990 Program Request

The Agency requests a total of \$3,160,800 supported by 45.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$297,600 from 1989 and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs.

The 1990 request supports the development of national policy and implementation of the national regulatory programs for the Water Quality and Drinking Water media. Specific activities include: management of the Office of Water operating guidance and accountability system; development of program plans and budget for implementation of Agency policies; development of legislative initiatives and directions; review of regulations and program policies; tracking of budget execution; and administrative management.

1989 Program

In 1989, the Agency is allocating a total of \$2,863,200 supported by 45.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

This program is supporting the development of national policy and implementation of the national regulatory programs for the Water Quality and Drinking Water media. Specific activities include: management of the Office of Water operating guidance and accountability system; development of program plans and budget for implementation of Agency policies; development of legislative initiatives and directions; review of regulations and program policies; tracking of budget execution; and administrative management.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,707,700 supported by 47.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The program continued to focus in 1988 on the implementation of the Clean Water Act and Safe Drinking Water Act. Activities such as long-range planning and policy analysis, budget development and execution, and administrative management were accomplished.

PROGRAM MANAGEMENT - ENFORCEMENT AND COMPLIANCE MONITORING

1990 Program Request

The Agency requests a total of \$538,100 supported by 9.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$59,200 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs.

This request will be used to provide basic administrative, financial and management services to the Office of Enforcement and Compliance Monitoring

(OECM). These functions include program planning, personnel management, budgeting, financial management, management analysis and administrative services. The resources will also be used to continue to provide support and oversight of the management operations of the National Enforcement Investigations Center (NEIC). This level of funding will also provide resources for budget formulation and resource distribution for the legal enforcement functions of the ten Regional Counsels.

1989 Program

In 1989, the Agency is allocating a total of \$478,900 supported by 9.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

The program provides program direction and management support for OECM. In addition to supporting the Assistant Administrator, it includes the OECM management operations functions. The Management Operations staff is responsible for the internal program planning, budget formulation, financial management, and administrative operations for the entire Office of Enforcement and Compliance Monitoring, as well as budget formulation and resource distribution for the enforcement functions of the ten Regional Counsels.

1988 Accomplishments

In 1988, the Agency obligated \$461,800 supported by 8.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

This program provided basic managerial support for program planning, personnel, budget, financial management, and administrative support services to the Assistant Administrator of OECM. In addition, budget formulation support was provided to the NEIC, Regional legal enforcement, and the expanding and increasingly visible Criminal Investigation Program. In 1988, emphasis on improving management systems continued. Many of these systems were automated to provide more consistent and timely information for use in enforcement management.

PROGRAM MANAGEMENT - EXTERNAL AFFAIRS

1990 Program Request

The Agency requests a total of \$779,700 supported by 11.7 total workyears, for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$62,300 and no change in total workyears from 1989. The increase will provide additional resources for increased personnel and support costs. In 1990 this office will continue the full coordination of the staff offices in External Affairs; provide the necessary oversight, management, planning, and support services to these staff offices; and support the Administrator and Assistant Administrators in coordinating, representing and communicating the Agency's programs and policies to Congress, the public, government entities and the news media.

1989 Program

In 1989 the Agency is allocating total of \$717,400 supported by 11.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. Continued emphasis is placed on strengthening strategies and procedures for communicating better with outside groups by informing affected parties in a timely manner about Office of External Affairs (OEA) actions and the decisions and risks the Agency must face.

1988 Accomplishments

In 1988 the Agency obligated a total of \$667,800 supported by 11.0 total workyears for this program, all of which was from the Salaries and Expenses appropriation. In 1988, the office worked to enhance a process to communicate more effectively with the public and outside groups. This program element also provided management resources and administrative support necessary to support the Offices of External Affairs and staff offices.

PROGRAM MANAGEMENT - PESTICIDES AND TOXIC SUBSTANCES

1990 Program Request

The Agency requests a total of \$3,008,700 supported by 42.6 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents a decrease of \$71,100 and a decrease of 0.2 total workyears from 1989. The decrease in Salaries and Expenses results from management efficiencies.

This program will support senior level management of the Pesticides and Toxic Substances program and the Immediate Office of the Assistant Administrator for Pesticides and Toxic Substances, as well as partially funding, along with the Office of Research and Development (ORD), the activities of the Biotechnology Science Advisory Committee. Key activities include: efficient and effective general management, strategies planning, and administrative and budget support.

1989 Program

In 1989, the Agency is allocating a total of \$3,079,800 supported by 42.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources provide senior level management of the Pesticides and Toxic Substances programs and the Immediate Office of the Assistant Administrator for Pesticides and Toxic Substances with support, as well as partially funding, along with ORD, the activities of the Biotechnology Science Advisory Committee.

1988 Accomplishments

In 1988 the Agency obligated a total of \$2,369,700 supported by 38.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation. These resources provided support for the senior level management of the Pesticides and Toxic Substances programs and the Immediate Office of the Assistant Administrator for Pesticides and Toxic Substances and,

along with the Office of Research and Development, funded the activities of the Biotechnology Science Advisory Committee.

PROGRAM MANAGEMENT - GENERAL COUNSEL

1990 Program Request

The Agency requests a total of \$518,300 supported by 10.5 workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$28,500 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs.

The request will support planning, budgeting, financial management, management analysis, and administrative services to the Office of General Counsel.

1989 Program

In 1989, the Agency is allocating a total of \$489,800 supported by 10.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

The program provides for planning, budgeting, financial management, management analysis, and administrative services to the Office of General Counsel.

1988 Accomplishments

In 1988, the Agency obligated a total of \$479,400 supported by 9.9 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

Activities focused on providing planning, analytical support, budgeting, financial management, and administrative services to the Office of General Counsel.

PROGRAM MANAGEMENT - RESEARCH AND DEVELOPMENT

1990 Program Request

The Agency requests a total of \$5,462,500 supported by 62.4 total workyears, all of which will be for the Salaries and Expenses appropriation. This represents a decrease of \$252,500 and 0.1 total workyears from 1989. The decreases reflect anticipated operating efficiencies.

In 1990, ORD's program management activities will provide overall direction, scientific policy guidance and administrative support to a diversified research program which is conducted in Headquarters in 12 major laboratories and 6 field sites across the country. These activities will ensure the coordination of research efforts and efficient use of resources to meet the Agency's research requirements. Specific activities include the formulation and dissemination of scientific and managerial policy for ORD,

coordination of the research program planning and budgeting cycle, development of research strategies and program plans for a balanced and integrated program, and the monitoring and analysis of current year resources, research operations and research products.

1989 Program

In 1989, the Agency is allocating a total of \$5,715,000 supported by 62.5 total workyears, all of which is from the Salaries and Expenses appropriation. Program management will continue to coordinate and integrate the entire research and development effort of the Agency, ensuring that the needs identified by program and Regional offices are met.

1988 Accomplishments

The Agency obligated a total of \$4,683,000 supported by 52.7 total workyears in 1988, all of which was from the Salaries and Expenses appropriation. These resources provided for the overall direction, policy guidance, management analyses, liaison activities, program planning and budgeting, ORD's information systems, and general administrative support.

PROGRAM MANAGEMENT - SOLID WASTE AND EMERGENCY RESPONSE

1990 Program Request

The Agency requests a total of \$1,742,000 supported by 28.0 total workyears, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$122,800 and a decrease of 0.2 in workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs.

This request will allow the Agency to continue to maintain a complete administrative and programmatic management team within the Office of Solid Waste and Emergency Response (OSWER). This will provide for the full array of policy development and analysis activities, institutional and public liaison functions, financial management, and other support activities for the OSWER programs.

1989 Program

In 1989, the Agency is allocating a total of \$1,619,200 supported by 28.2 total workyears, all of which is from the Salaries and Expenses appropriation. This level of resources provides for a wide range of support from the OSWER management team to the Regions, to the program offices, and to the Agency. OSWER program management activities include the review of policy recommendations and proposed regulations; integration of both program and funds control; information management; property management; and administrative support.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,860,900 supported by 30.4 total workyears, all of which was from the Salaries and Expenses appropriation. OSWER program management integrated hazardous waste and Superfund activities; managed the review of policy recommendations and proposed regulations; maintained effective management controls; and provided personnel, financial, administrative, and information management support to the program offices.



Office of the Administrator

SECTION TAB

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT AND SUPPORT</u>	11-1
<u>AGENCY MANAGEMENT</u>	
Office of the Administrator/Executive Offices	11-16
Immediate Office of the Administrator.	11-19
Office of Regional Operations.	11-20
Office of Executive Support.	11-20
Administrator's Representation Fund.	11-21
Office of International Activities	11-22
Office of Civil Rights	11-23
Science Advisory Board	11-24
Office of Administrative Law Judges.	11-24
Office of Small and Disadvantaged Business Utilization	11-25
Office of Inspector General	11-27
Office of Inspector General.	11-28
Office of General Counsel	11-31
General Counsel.	11-32
Office of External Affairs.	11-33
Office of Legislative Analysis	11-35
Office of Congressional Liaison.	11-36
Office of Public Affairs	11-36
Office of Community and Intergovernmental Relations.	11-37
Office of Federal Activities	11-38
Office of Policy, Planning and Evaluation	11-40
Program Management - Policy, Planning and Evaluation	11-42
Integrated Environmental Management Program.	11-43
Office of Policy Analysis.	11-44
Office of Standards and Regulations.	11-46
Office of Management Systems and Evaluation.	11-47
Pollution Prevention Program	11-49
Office of Administration and Resources Management	11-51
Program Management-Administration.	11-54
Financial Management - Headquarters.	11-55
Office of the Comptroller.	11-56
Contracts and Grants Management - Headquarters	11-57
Organization and Health Services	11-58
Facilities and Management Services	11-59
Information Systems and Services	11-60
Human Resources Management	11-61



AGENCY MANAGEMENT
Office of the Administrator/Executive Offices

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Immediate Office of the Administrator					
Salaries & Expenses	\$1,953.3	\$2,120.3	\$2,120.3	\$2,182.3	\$62.0
TOTAL	\$1,953.3	\$2,120.3	\$2,120.3	\$2,182.3	\$62.0
Office of Regional Operations					
Salaries & Expenses	\$489.7	\$383.8	\$383.8	\$409.4	\$25.6
TOTAL	\$489.7	\$383.8	\$383.8	\$409.4	\$25.6
Office of Executive Support					
Salaries & Expenses	\$921.9	\$998.1	\$997.3	\$1,045.3	\$48.0
TOTAL	\$921.9	\$998.1	\$997.3	\$1,045.3	\$48.0
Administrator's Representation Fund					
Salaries & Expenses	\$2.9	\$3.0	\$3.0	\$5.0	\$2.0
TOTAL	\$2.9	\$3.0	\$3.0	\$5.0	\$2.0
Office of International Activities					
Salaries & Expenses	\$1,593.0	\$1,619.9	\$1,779.8	\$1,831.8	\$52.0
Abatement Control and Compliance			\$432.5	\$440.0	\$7.5
TOTAL	\$1,593.0	\$1,619.9	\$2,212.3	\$2,271.8	\$59.5
Office of Civil Rights					
Salaries & Expenses	\$1,486.7	\$1,481.9	\$1,476.4	\$1,528.4	\$52.0
TOTAL	\$1,486.7	\$1,481.9	\$1,476.4	\$1,528.4	\$52.0
Science Advisory Board					
Salaries & Expenses	\$1,317.2	\$1,440.3	\$1,438.0	\$1,482.0	\$44.0
TOTAL	\$1,317.2	\$1,440.3	\$1,438.0	\$1,482.0	\$44.0
Office of Administrative Law Judges					
Salaries & Expenses	\$896.7	\$1,050.4	\$1,050.4	\$1,130.5	\$80.1
TOTAL	\$896.7	\$1,050.4	\$1,050.4	\$1,130.5	\$80.1

AGENCY MANAGEMENT
Office of the Administrator/Executive Offices

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Office of Small & Disadvantaged Business Utilization					
Salaries & Expenses	\$547.6	\$513.9	\$513.1	\$537.1	\$24.0
TOTAL	\$547.6	\$513.9	\$513.1	\$537.1	\$24.0

TOTAL:					
Salaries & Expenses	\$9,209.0	\$9,611.6	\$9762.1	\$10,151.8	\$389.7
Abatement Control and Compliance			\$432.5	\$440.0	\$7.5
Office of the Administrator/ Executive Offices					
TOTAL	\$9,209.0	\$9,611.6	\$10,194.6	\$10,591.8	\$397.2

PERMANENT WORKYEARS

Immediate Office of the Administrator	30.8	35.3	34.8	37.8	3.0
Office of Regional Operations	6.2	5.0	5.0	5.0	
Office of Executive Support	21.8	24.8	24.8	24.8	
Office of International Activities	23.3	24.0	27.0	28.0	1.0
Office of Civil Rights	23.7	23.8	23.8	24.8	1.0
Science Advisory Board	13.2	14.6	14.6	24.4	9.8
Office of Administrative Law Judges	17.1	16.8	16.8	17.4	6
Office of Small & Disadvantaged Business Utilization	7.4	6.9	6.9	6.9	
TOTAL PERMANENT WORKYEARS	143.5	151.2	153.7	169.1	15.4

AGENCY MANAGEMENT
Office of the Administrator/Executive Offices

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

TOTAL WORKYEARS					

Immediate Office of the Administrator	32.6	38.3	37.8	37.8	
Office of Regional Operations	6.6	5.0	5.0	5.0	
Office of Executive Support	22.9	24.8	24.8	24.8	
Office of International Activities	24.9	25.0	28.0	28.0	
Office of Civil Rights	24.6	24.8	24.8	24.8	
Science Advisory Board	19.6	24.4	24.4	24.4	
Office of Administrative Law Judges	17.1	17.4	17.4	17.4	
Office of Small & Disadvantaged Business Utilization	7.4	6.9	6.9	6.9	
TOTAL WORKYEARS	155.7	166.6	169.1	169.1	

MANAGEMENT AND SUPPORT

Agency Management

Office of the Administrator/Executive Offices

Budget Request

The Agency requests a total of \$10,591,800 supported by 169.1 total workyears in 1990. This represents an increase of \$397,200 and no change in total workyears from 1989. Of the request, \$10,151,800 will be for the Salaries and Expenses appropriation and \$440,000 will be for the Abatement, Control, and Compliance Appropriation.

IMMEDIATE OFFICE OF THE ADMINISTRATOR

1990 Program Request

The Agency requests a total of \$2,182,300 and 37.8 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$62,000 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The Office is responsible for Agency policy and direction, and for setting environmental goals. In 1990, emphasis will be put on the Judicial Officer function to accommodate the expanding number of requests sent to the Judicial Officer for final decision, especially the Resource Conversation and Recovery Act permits and civil penalty cases which are expected to increase over the next several years.

1989 Program

In 1989, the Agency is allocating a total of \$2,120,300 supported by 37.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The major priorities in the Immediate Office are: increased emphasis on enforcement and compliance efforts of both environmental and civil rights regulations, continued delegations to State and local governments, on-going support of enhanced science as a basis for decision-making, and use of improved methodologies for managing risk.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,953,300 supported by 32.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The major focus of activity was enforcement and compliance efforts to ensure better internal management, and to meet the increased number of requests sent to the Judicial Officer function for final decision.

OFFICE OF REGIONAL OPERATIONS

1990 Program Request

The Agency requests a total of \$409,400 supported by 5.0 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$25,600 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The Office will continue to ensure that the Administrator's policies are effectively communicated to the Regional Administrators; that the Administrator is alerted to potential Regional problems and concerns; and that the Administrator is assisted in managing significant Regional issues. The Office will also continue to address the basic management needs of the Environmental Services Divisions and will continue to advise the Regional Offices on risk reduction and management.

1989 Program

In 1989, the Agency is allocating a total of \$383,800 and 5.0 total workyears, all of which is from the Salaries and Expenses appropriation. The Office provides a key communications link between the Administrator and the ten Regional offices, and plays an active part in Regional budget issues. The Office also has put emphasis on providing guidance for and oversight of the ten Environmental Services Divisions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$489,700 and 6.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office ensured that the Administrator's policies were effectively communicated to the Regional Administrators, that the Regions were included in the policy-making and decision-making processes, and that the Administrator was kept informed of Regional concerns and issues. In addition, the Office carried out its responsibility as the Headquarters focal point for the Agency's Environmental Services Divisions.

OFFICE OF EXECUTIVE SUPPORT

1990 Program Request

The Agency requests a total of \$1,045,300 supported by 24.8 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$48,000 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. This Office will continue to provide monitoring of resource expenditures, develop the outyear budget for the staff offices, provide centralized personnel and management support services, and provide assistance to staff offices with recruitment, staffing, and property control. The Office will continue to prepare a yearly report to Congress on the cost to the Agency and to the public of administering the Freedom of Information Act, to provide policy and program oversight on the Freedom of Information program, and to manage and track executive and Congressional correspondence.

1989 Program

In 1989, the Agency is allocating a total of \$997,300 supported by 24.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The Office is responsible for monitoring resource expenditures, developing the outyear budget for the staff offices, providing centralized personnel and management support services, and providing assistance to staff offices with recruitment, staffing, and property control. The Office continues to prepare a yearly report to Congress on the cost to the Agency and to the public of administering the Freedom of Information Act, to provide policy and program oversight on the Freedom of Information Act, and to manage and track executive and Congressional correspondence.

1988 Accomplishments

In 1988, the Agency obligated a total of \$921,900 supported by 22.9 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office completed monthly financial and operating plan reports, developed the outyear budget for the staff offices, and conducted workload analyses for Regional Management. In addition, it provided assistance and staffing plan development, program management services, and resource and computer planning studies for the Administrator's staff offices. The Office logged, controlled and monitored all Freedom of Information requests, Congressional correspondence, and correspondence addressed to the Administrator and the Deputy Administrator.

ADMINISTRATOR'S REPRESENTATION FUND

1990 Program Request

The Agency requests a total of \$5,000 for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$2,000 from 1989. This increase will be the first increase since 1979 and will provide the Administrator the resources necessary to meet the expanding requirements for official reception and meetings for visiting dignitaries. The increase will also help offset the increased cost of these functions over the past 10 years.

1989 Program

In 1989, the Agency is allocating a total of \$3,000 to this program, all of which is from the Salaries and Expenses appropriation. These funds are to cover the expenses of official receptions and other functions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,900 for this function from the Salaries and Expenses appropriation. This amount covered the expenses of official receptions and other functions.

OFFICE OF INTERNATIONAL ACTIVITIES

1990 Program Request

The Agency requests a total of \$2,271,800 supported by 28.0 total workyears for this Office, of which \$1,831,800 is for the Salaries and Expenses appropriation and \$440,000 is for the Abatement, Control, and Compliance appropriation. This represents an increase of \$52,000 in the Salaries and Expenses appropriation, \$7,500 in the Abatement, Control and Compliance appropriation and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The Office will continue to manage the Agency's international activities and programs with an active role in bilateral agreements, such as the transboundary pollution management agreements with Mexico and Canada, and international organizations. In 1990, the Office's activities will focus on a host of global and Regional air pollution issues involving policy formulation, intra- and interagency coordination, and international negotiations. Emphasis will be three-fold: on global climate change, particularly to influence the policies and activities of United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO); on acid precipitation from sulfur and nitrogen oxides, including the design and implementation of Regional accords and international conventions; and on urban air pollution from vehicles and other sources. In addition, the Office will play an active role in emphasizing the marine environment, extending its responsibilities to include policy formulation, intra-and interagency coordination and international negotiations.

1989 Program

In 1989, the Agency is allocating a total of \$2,212,300 supported by 28.0 total workyears to this Office, of which \$1,779,800 is from the Salaries and Expenses appropriation and \$432,500 is from the Abatement Control, and Compliance appropriation. The Office continues to provide guidance, coordination, and exchange of scientific and technical information on a regular basis in support of Agency programs and fosters agreed upon approaches to common environmental problems with border countries. In 1989, the Office is playing a more active role with international organizations including the Organization for Economic Cooperation and Development, the United Nations Environment Program and the Economic Commission for Europe. In addition, the Office will be serving as the U.S. coordinator for the North Atlantic Treaty Organization's (NATO) Committee on the Challenges of Modern Society (CCMS).

1988 Accomplishments

The Agency obligated a total of \$1,593,000 and 24.9 total workyears for this program, all of which was from the Salaries and Expenses appropriation. Dealing with border pollution problems with Canada and Mexico dominated the focus of OIA. This included negotiations with Canada on transboundary air quality issues including ozone, and negotiations with Mexico concerning a new border agreement on control of border sanitation problems. New initiatives were also taken in support of bilateral cooperation with the USSR and China. Emphasis was also directed to facilitating trade and environmental aspects of trade in chemicals and shipment of hazardous wastes.

OFFICE OF CIVIL RIGHTS

1990 Program Request

The Agency requests a total of \$1,528,400 supported by 24.8 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$52,000 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. In 1990, the Office of Civil Rights will continue to provide technical guidance and direction to the Agency's civil rights efforts; provide policy guidance and implementation of the discrimination complaints processing system; increase policy monitoring and support for Regional Civil Rights Offices, as well as for Headquarters Office of Civil Rights; provide continuous monitoring of affirmative action plan implementation; expand and improve the Equal Employment Opportunity (EEO) counseling program to resolve complaints through informal conciliation; strengthen and improve the special emphasis programs by conducting seminars and workshops for special emphasis employees and Agency managers; increase quantity and quality of EEO reviews and studies; and improve the implementation of the Agency regulations regarding non-discrimination in Federally assisted programs. Emphasis will be put on reducing the average processing time for complaints of discrimination to comply with the regulatory limit and providing increased management support and quality control through on-site evaluations.

1989 Program

The Agency is allocating a total of \$1,476,400 and 24.8 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. These resources enable the Office of Civil Rights (OCR) to continue to provide technical guidance and direction for the Agency's Civil Rights efforts. The Office is strengthening and improving the special emphasis programs by conducting seminars and workshops for special emphasis employees and Agency managers, and continues to conduct EEO reviews and studies and provide management support and quality control through on-site program evaluations. OCR continues to implement the Agency's regulations regarding non-discrimination in Federally-assisted programs.

1988 Accomplishments

The Agency obligated a total of \$1,486,700 supported by 24.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office of Civil Rights carried out national equal employment opportunity monitoring and enforcement programs; managed the Agency's affirmative action program, special emphasis programs and the discrimination complaints program; implemented regulations and programs requiring EPA grant recipients to adhere to the civil rights laws and labor standard requirements of applicable Federal statutes; and served as the Agency's focal point for the Historically Black Colleges and Universities program. Specifically, the Office evaluated activities required to carry out the Agency's responsibilities to assure equal opportunity and to prohibit discrimination in employment at EPA; ensured implementation of the Agency's Special Emphasis Programs (Federal Women's, Hispanic Employment and Black Employment Programs); implemented and monitored the Agency's Affirmative Action Plans to remedy under representation in the workforce; and assured compliance by Agency grantees and contractors

with provisions of civil rights laws and labor standards requirements of applicable Federal statutes.

SCIENCE ADVISORY BOARD

1990 Program Request

The Agency requests a total of \$1,482,000 supported by 24.4 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$44,000 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. In 1990, approximately 78 regulatory issues will be identified for the Science Advisory Board (SAB) to review. The increased number of issues will include 9 new water reviews related to the Safe Drinking Water Act.

1989 Program

In 1989, the Agency is allocating a total of \$1,438,000 supported by 24.4 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The Science Advisory Board is providing expert, independent advice to the Administrator and the Agency on 61 scientific and technical issues before the Agency.

1988 Accomplishments

The Agency obligated a total of \$1,317,200 supported by 19.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The SAB was involved in 56 reviews during 1988. Included among these reviews were issues relating to hazardous air pollutants, toxic substances, ozone in drinking water, municipal waste combustion, radiological protection, and radon.

OFFICE OF ADMINISTRATIVE LAW JUDGES (ALJ)

1990 Program Request

The Agency requests a total of \$1,130,500 supported by 17.4 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$80,100 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. In 1990, this Office will continue to preside over and conduct hearings required by the Administrative Procedures Act related to suspension, cancellation, licensing and enforcement actions, including the assessment of civil penalties initiated by the Agency. Preliminary estimates indicate that there will be approximately 1,100 cases on the Office of Administrative Law Judges' docket, an increase of approximately 150 cases from 1988.

1989 Program

In 1989, the Agency is allocating a total of \$1,050,400 supported by 17.4 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The ALJ expects to receive approximately 1,050 cases

from EPA Regional offices in 1989. Of this total, approximately 220 cases are expected to be under the Resource Conservation and Recovery Act (RCRA), 550 cases under the Toxic Substances Control Act (TSCA), 145 cases under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and 35 cases under the Safe Drinking Water Act (SDWA). In addition, this Office will handle approximately 135 cases originating at Headquarters, including suspensions; cancellations; Sec. 3(c)(1)(D) of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); and Clean Air Act cases.

1988 Accomplishments

In 1988, the Agency obligated a total of \$896,700 and 17.1 total workyears for this program, all of which was from the Salaries and Expenses appropriation. This Office maintained a docket of 934 cases. Of these cases, 205 were under RCRA; 532 were under TSCA; and 140 cases were under FIFRA.

OFFICE OF SMALL AND DISADVANTAGED BUSINESS UTILIZATION

1990 Program Request

The Agency requests a total of \$537,100 supported by 6.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$24,000 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The Office will continue to provide technical assistance to both Headquarters and Regional program office personnel to ensure that small, minority and/or women's businesses are receiving a "fair share" of procurement dollars under EPA's Financial Assistance Program. In addition, the ombudsman will respond to approximately 8,000 inquiries from small firms on regulatory matters and will provide advice on the many new regulations that will bring about the desired level of voluntary compliance to several thousand small businesses.

1989 Program

The Agency is allocating a total of \$513,100 supported by 6.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation. In 1989, emphasis is being placed on handling additional "Hotline" calls, implementing a Small Business Ombudsman Strategy, creating business regulatory outreach demonstration projects, and promoting Minority Business Enterprise and Women's Business Enterprise participation in the Agency's financial assistance programs to comply with Executive Order 12432. In addition, the Office will monitor and provide advice on the many new regulations that will bring about the desired level of voluntary compliance by several thousand small businesses.

1988 Accomplishments

In 1988, the Agency obligated a total of \$547,600 supported by 7.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The Office coordinated activities with EPA's procurement and financial assistance programs by providing training and technical assistance; provided assistance toward increasing the level of Minority Business

Enterprise/Women's Business Enterprise (MBE/WBE) participation in EPA-assisted programs; provided technical and managerial assistance to Headquarters and Regional staff assigned to socio-economic program activities, and counseled minority and women's businesses in compliance with Executive Order 12432.

Office of Inspector General

SECTION TAB

AGENCY MANAGEMENT
Office of the Inspector General

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM					

Office of Inspector General					
Salaries & Expenses	\$15,558.1	\$16,245.7	\$16,193.9		-\$16,193.9
Office of Inspector General				\$21,417.4	\$21,417.4
					-\$16,193.9
TOTAL	\$15,558.1	\$16,245.7	\$16,193.9	\$21,417.4	\$5,223.5
TOTAL:					
Salaries & Expenses	\$15,558.1	\$16,245.7	\$16,193.9		-\$16,193.9
Office of Inspector General				\$21,417.4	\$21,417.4
TOTAL	\$15,558.1	\$16,245.7	\$16,193.9	\$21,417.4	\$5,223.5
PERMANENT WORKYEARS					

Office of Inspector General	220.8	227.4	226.8	242.8	16.0
TOTAL PERMANENT WORKYEARS	220.8	227.4	226.8	242.8	16.0
TOTAL WORKYEARS					

Office of Inspector General	224.7	227.4	226.8	242.8	16.0
TOTAL WORKYEARS	224.7	227.4	226.8	242.8	16.0

MANAGEMENT AND SUPPORT

Agency Management

Office of Inspector General

Budget Request

The Agency requests a total of \$21,417,400 supported by 242.8 total workyears for 1990, an increase of \$5,223,500 and 16 total workyears from 1989. All of this request will be for activities in the Office of the Inspector General appropriation that were transferred from the Salaries and Expenses appropriation.

OFFICE OF INSPECTOR GENERAL

1990 Program Request

The Agency requests a total of \$21,417,400 supported by 242.8 total workyears, all of which will be for activities in the Office of the Inspector General appropriation that were transferred from the Salaries and Expenses appropriation. This represents an increase of \$5,223,500 and 16 total workyears from 1989. We will use these resources to (1) provide audits of construction grants, including mega-grantees, that save the most Agency dollars; (2) help build State and local capacity through audits of States' Revolving Fund plans to assist States in establishing and administering their programs according to statute; (3) investigate construction grant fraud; (4) support the Agency personnel security program and the OIG human resources development program; and (5) provide support costs such as rent, ADP, and telecommunications. As a result of newly enacted legislation, the OIG now has a separate appropriation which includes the above staff support costs.

The resources requested will be used by the Office of Inspector General (OIG) to continue conducting internal and management audits to improve the economy, efficiency, and effectiveness of EPA programs and to provide and expand audit coverage to EPA programs and operations which have received little or no previous attention. The OIG will emphasize reviewing programs aimed at achieving environmental results and ensuring strong enforcement including (1) air and water quality, (2) hazardous waste disposal, (3) pesticides and toxics, and (4) asbestos grants and loans. The OIG will expand its program of external audits of grants and contracts which have historically recovered over \$14 in costs for each audit dollar spent and initiate audits of State Revolving Funds.

The OIG will also expand investigations of antitrust activities and other construction-related fraud and will aggressively pursue new initiatives, including examinations of possible antitrust activities, the use of substandard materials by architectural and engineering firms and conspiracies to defraud by contract laboratories. By focusing efforts on fraud cases in vulnerable areas and by taking more proactive initiatives, the OIG expects to obtain greater results, including more indictments, convictions, and monetary recoveries.

The OIG will continue its efforts in fraud prevention by publicizing OIG activities to EPA employees, identifying areas sensitive to fraud, and developing new fraud detection tools and methods.

1989 Program

In 1989, the Agency is allocating a total of \$16,193,900 supported by 226.8 total workyears, all of which is from the Salaries and Expense appropriation. The OIG is continuing to perform internal and management audits needed to help improve the economy, efficiency, and effectiveness of the Agency's overall program operations. Primary emphasis is on reviewing programs or areas in which insufficient audit resources have been devoted. For example, this includes such reviews as EPA's controls over the importation and exportation of hazardous wastes, enforcement of standards for non-community water systems, enforcement of the national emission standards for asbestos, and the enforcement of financial penalties and closures of sites for hazardous waste violations. Such reviews assist Agency managers to identify and correct major systemic problems which in turn strengthen environmental programs. These reviews help the Agency meet its mission while ensuring that limited resources are used more efficiently and effectively.

The OIG investigative resources are devoted to conducting criminal investigations relating to EPA programs and operations. Major investigations cover bid rigging and other fraud in EPA-funded construction activities; procurement fraud; false claims; fraud and misconduct concerning EPA employees; and administrative investigations of improprieties involving EPA programs and personnel. New initiatives have been aggressively started to identify fraud in the contract laboratory program and use of substandard materials in construction projects. Efforts are continuing to encourage the use of the OIG hotline to uncover instances of suspected fraud, waste, and mismanagement. Under the fraud prevention program, the OIG is providing technical and audit assistance to the Agency assessing the adequacy of internal controls as required by the Federal Managers' Financial Integrity Act of 1982.

1988 Accomplishments

In 1988, the Agency obligated a total of \$15,558,100 supported by 224.7 total workyears, all of which was from the Salaries and Expenses appropriation. The Office of Inspector General issued 1,920 audit reports which questioned costs of \$484,200,000. Overall, \$53,000,000 of costs questioned were sustained by Agency management. During the year, the Agency obtained \$47,700,000 of costs efficiencies and \$42,900,000 of actual cash recoveries as a result of audit efforts. An expanded internal and management audit program was implemented and about 35 percent of the OIG audit resources were devoted to examining many critical areas which had not previously been audited. Internal audits provided recommendations for improving the effectiveness, efficiency, and results of EPA program operations. Investigative activities focusing on major civil and criminal violations have resulted in the recovery of \$1,655,026 in fines and restitution.

Key improvements resulting from OIG audits included: (1) strengthening inspections and enforcement of hazardous air pollutants standards for asbestos; (2) strengthening of controls over the permitting of hazardous waste sites; (3) developing and enacting an enforcement strategy over the export and import

of hazardous wastes; and (4) initiating an aggressive action plan to identify and enforce closings of hazardous waste sites. The OIG opened 290 new investigations and closed 264 investigations, obtaining 67 indictments or convictions. Significant results were achieved in investigations of construction-related fraud, and bribery in the inspection of asbestos removal, and the submission of fraudulent documentation involving emissions testing of foreign vehicles. The OIG also initiated a fraud prevention and detection awareness program for EPA managers to encourage and improve their recognition and reporting of possible fraud and abuse.



Office of General Counsel

SECTION TAB

AGENCY MANAGEMENT
Office of General Counsel

		ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)						
PROGRAM						

Office of General Counsel						
Salaries & Expenses		\$7,255.9	\$7,223.0	\$7,190.5	\$7,864.5	\$674.0
	TOTAL	\$7,255.9	\$7,223.0	\$7,190.5	\$7,864.5	\$674.0
TOTAL:						
Salaries & Expenses		\$7,255.9	\$7,223.0	\$7,190.5	\$7,864.5	\$674.0
Office of General Counsel	TOTAL	\$7,255.9	\$7,223.0	\$7,190.5	\$7,864.5	\$674.0
PERMANENT WORKYEARS						

Office of General Counsel		105.7	117.9	117.5	125.7	8.2
TOTAL PERMANENT WORKYEARS		105.7	117.9	117.5	125.7	8.2
TOTAL WORKYEARS						

Office of General Counsel		115.4	125.1	124.7	125.7	1.0
TOTAL WORKYEARS		115.4	125.1	124.7	125.7	1.0

MANAGEMENT AND SUPPORT

Agency Management

Office of General Counsel

Budget Request

The Agency requests a total of \$7,864,500 supported by 125.7 total workyears for 1990, an increase of \$674,000 and an increase of 1.0 total workyears from 1989. All of the request will be for the Salaries and Expenses appropriation.

GENERAL COUNSEL

1990 Program Request

The Agency requests a total of \$7,864,500 supported by 125.7 workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$674,000 and an increase of 1.0 total workyears from 1989. The increase will provide for additional legal support to the Agency's procurement program, and for increased personnel and support costs.

The Office of General Counsel (OGC) will provide legal advice and counsel to Agency management and media program offices concerning legal interpretation of EPA administered statutes, other applicable laws, regulations and administrative areas such as personnel, grants, contracts, and access by the public to EPA held information. The OGC will handle litigation in which EPA is a defendant. Legal support and review will be provided for all major regulatory actions, policy documents and guidelines to insure that legal error is avoided.

1989 Program

In 1989, the Agency is allocating a total of \$7,190,500 supported by 124.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The 1989 program provides continued support to Agency program priorities through legal advice and assistance, handling defensive litigation, review of Agency rulemaking actions, and participating in selected administrative proceedings.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,255,900 supported by 115.4 total workyears, all of which was from the Salaries and Expenses appropriation. In 1988, the OGC supported Agency priorities by providing legal advice and support to Agency managers and by defending the Agency in litigation filed against it. OGC also reviewed regulatory actions to ensure legal defensibility and provided advice on other actions, such as grants, contracts, and personnel matters.



Office of External Affairs

SECTION TAB

AGENCY MANAGEMENT
Office of External Affairs

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

Office of Legislative Analysis					
Salaries & Expenses	\$904.2	\$1,004.7	\$991.7	\$1,078.4	\$86.7
TOTAL	\$904.2	\$1,004.7	\$991.7	\$1,078.4	\$86.7
Office of Congressional Liaison					
Salaries & Expenses	\$935.4	\$938.8	\$931.1	\$1,012.5	\$81.4
TOTAL	\$935.4	\$938.8	\$931.1	\$1,012.5	\$81.4
Office of Public Affairs					
Salaries & Expenses	\$2,781.2	\$2,691.3	\$2,690.2	\$2,994.2	\$304.0
TOTAL	\$2,781.2	\$2,691.3	\$2,690.2	\$2,994.2	\$304.0
Office of Community and Intergovernmental Relations					
Salaries & Expenses	\$755.3	\$879.3	\$876.0	\$952.6	\$76.6
TOTAL	\$755.3	\$879.3	\$876.0	\$952.6	\$76.6
Office of Federal Activities					
Salaries & Expenses	\$1,830.0	\$1,930.3	\$1,980.3	\$2,161.1	\$180.8
TOTAL	\$1,830.0	\$1,930.3	\$1,980.3	\$2,161.1	\$180.8
TOTAL:					
Salaries & Expenses	\$7,206.1	\$7,444.4	\$7,469.3	\$8,198.8	\$729.5
Office of External Affairs					
TOTAL	\$7,206.1	\$7,444.4	\$7,469.3	\$8,198.8	\$729.5

AGENCY MANAGEMENT
Office of External Affairs

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

PERMANENT WORKYEARS					

Office of Legislative Analysis	14.9	16.4	16.4	19.8	3.4
Office of Congressional Liaison	17.8	19.0	19.0	20.8	1.8
Office of Public Affairs	40.5	38.5	38.5	43.5	5.0
Office of Community and Intergovernmental Relations	10.6	14.4	14.4	14.4	
Office of Federal Activities	27.0	28.3	28.3	31.9	3.6
TOTAL PERMANENT WORKYEARS	110.8	116.6	116.6	130.4	13.8
TOTAL WORKYEARS					

Office of Legislative Analysis	17.2	20.1	19.8	19.8	
Office of Congressional Liaison	19.8	20.9	20.8	20.8	
Office of Public Affairs	45.9	42.5	42.5	43.5	1.0
Office of Community and Intergovernmental Relations	11.6	14.4	14.4	14.4	
Office of Federal Activities	30.6	30.9	30.9	31.9	1.0
TOTAL WORKYEARS	125.1	128.8	128.4	130.4	2.0

MANAGEMENT AND SUPPORT

Agency Management

Office of External Affairs

Budget Request

The Agency requests a total of \$8,198,800 supported by 130.4 total workyears for 1990, an increase of \$729,500 and 2.0 total workyears from 1989. All of the request will be for the Salaries and Expenses appropriation.

OFFICE OF LEGISLATIVE ANALYSIS

1990 Program Request

The Agency requests a total of \$1,078,400 supported by 19.8 total workyears for 1990, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$86,700 and no change in total workyears from 1989. The increase will provide for increased personnel and support costs. During 1990, the Office will continue to ensure that testimony, draft legislation, and analyses and reports on pending and proposed legislation will be developed and provided to OMB and the Congress in a timely fashion and consistent with Agency and Administration policies.

1989 Program

In 1989, the Agency is allocating a total of \$991,700 supported by 19.8 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. The 1989 program includes developing draft legislative proposals extending the appropriations required for seven of EPA's major statutory authorities. In addition, the Office will conduct extensive analyses in connection with a multitude of significant amendments to the Clean Air Act and other air related issues. The Office also has begun preparation of the 1989 legislative program and selected areas in which legislative proposals were considered for possible introduction during the remainder of the 101st Congress.

1988 Accomplishments

In 1988, the Agency obligated a total of \$904,200 supported by 17.2 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. The Office developed draft legislative proposals extending the appropriations required for all of EPA's major statutory authorities. In 1988, the Office developed testimony and related material for 109 hearings, reviewed and responded to 145 bills referred to the Agency from OMB and Congressional committees, 120 draft legislative reports proposed by other agencies, and 172 statements or testimony of other agencies.

OFFICE OF CONGRESSIONAL LIAISON

1990 Program Request

The Agency requests a total of \$1,012,500 supported by 20.8 total workyears for 1990, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$81,400 and no change in total workyears. The increase will provide for increased personnel and support costs. The budget request will enable the Office to provide effective day-to-day liaison with the Congress and will ensure that increasing member and committee requests are handled in a timely manner. The Office will continue to represent the views of the Agency to Congress, coordinate EPA related hearings and supervise daily interaction with Congressional members and staff.

1989 Program

In 1989, the Agency is allocating a total of \$931,100 supported by 20.8 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. The Office will continue to provide effective day-to-day liaison with Congress as it examines legislation relating to environmental issues.

1988 Accomplishments

In 1988, the Agency obligated a total of \$935,400 supported by 19.8 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. The Office of Congressional Liaison was responsible for all day-to-day Congressional contacts, including more than 250 briefings of members and/or staff, involvement in approximately 108 hearings, and coordination of numerous meetings, courtesy calls, specific Committee investigative information requests and casework generated by Congress.

OFFICE OF PUBLIC AFFAIRS

1990 Program Request

The Agency requests a total of \$2,994,200 supported by 43.5 total workyears for 1990, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$304,000 and 1.0 total workyears from 1989. The increase will support an EPA consumer affairs ombudsman as well as increased personnel and support costs. In 1990, the Office of Public Affairs will continue to inform, educate, and involve the public on the issues before the Agency and to promote understanding of the Agency's mission and the Administrator's goals and objectives.

1989 Program

In 1989, the Agency is allocating a total of \$2,690,200 supported by 42.5 total workyears for this Office, all of which is from the Salaries and Expenses

appropriation. In addition to working with the news media and providing informational materials for the general public, OPA is emphasizing: (1) improving coordination within the Agency of communication activities related to major Agency actions, and (2) strengthening long range planning of public information activities in coordination with major EPA program offices and the Regional offices.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,781,200 supported by 45.9 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. In addition to the general activities of informing the news media and providing information material to the public, the Office focused on Agency priority issues of concern to the public and provided communications support for major EPA initiatives.

OFFICE OF COMMUNITY AND INTERGOVERNMENTAL RELATIONS

1990 Program Request

The Agency requests a total of \$952,600 supported by 14.4 total workyears for this Office, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$76,600 and no change in total workyears from 1989. The increase will provide for increased personnel and support costs. In 1990, the Office will continue its implementation of leadership and guidance activities to support community relations efforts throughout the Agency, to maintain Agency liaison with state and local officials while increasing activities to enhance technology transfer capabilities and ensure emphasis on Federalism. In addition, the Agency plans to increase communications with private sector organizations not traditionally involved in environmental efforts, provide continuing assistance in delegation of environmental programs to State and local governments, and implement the President's Environmental Youth Awards program and other youth outreach activities.

1989 Program

In 1989, the Agency is allocating a total of \$876,000 supported by 14.4 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. During this year, the Office is implementing Agency guidance in community relations activities to provide maximum appropriate local involvement in EPA's decisions. The Office is developing enhanced ability to work with state and local governments, especially small governments, to improve their capacity for environmental responsibilities. The Office is continuing to enhance EPA's relationships with the States through the ongoing State/EPA Committee and its various adhoc work groups, developing ongoing communications with major environmental and other interest groups as well as private sector organizations. Support and coordination will continue to increase for the President's Environmental Youth Awards program.

1988 Accomplishments

In 1988, the Agency obligated a total of \$755,300 supported by 11.6 total workyears for this Office, all of which was from the Salaries and Expenses appropriation. During 1988, the Office established an ongoing series of briefings relating to national environmental organization leadership, increased the activities of the Agency's Youth Program, through the State/EPA Committee addressed major national environmental concerns of both States and EPA, and initiated regular dialogue on environmental issues with local government organizations.

OFFICE OF FEDERAL ACTIVITIES

1990 Program Request

The Agency requests a total of \$2,161,100 supported by 31.9 total workyears for this Office, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$180,800 and 1.0 total workyears. The increase will provide additional resources for monitoring EPA's Federal activities compliance program as well as for increased personnel and support costs. The Office of Federal Activities (OFA) will: maintain oversight concerning EPA's compliance with the National Environmental Policy Act, (NEPA) and other cross cutting Federal environmental statutes; oversee development and implementation of "NEPA-like" environmental processes for State Revolving Fund activities; direct activities to assure compliance by other Federal agencies with all environmental statutes pursuant to Executive Order 12088; and review the budget plans of other agencies to assure adequate funding of abatement projects pursuant to Office of Management and Budget Circular A-106; review other Federal agencies' projects and actions, including their Environmental Impact Statement (EISs in accordance with Section 309 of the Clean Air Act and NEPA; coordinate the implementation of EPA programs on Indian reservations; provide limited technical assistance to international environmental impact assessment program development and project reviews; and continue its Council on Environmental Quality EIS filing activities.

1989 Program

In 1989, the Agency is allocating a total of \$1,980,300 supported by 30.9 total workyears for this Office, all of which is from the Salaries and Expenses appropriation. The Office continues to: ensure that EPA programs operate in conformance with NEPA and other cross cutting Federal environmental statutes; direct activities pursuant to Executive Order 12088 and Office of Management and Budget Circular A-106 related to compliance of Federal installations with environmental regulations; review other Federal actions for potential environmental impact; analyze EPA policies associated with other Federal agencies; oversee the implementation of EPA's Indian Policy; provide limited supported for international environmental impact activities; and operate the Federal EIS filing effort.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,830,000 supported by 30.6 total workyears for this Office, all of which was from the Salaries and

Expenses appropriation. The Office focused its activity on: improving allocation and control of funding for the preparation of NEPA documents (EISs) and Finding of no Significant Impact (FNSIs), implementing new procedures for both review of Federal agency actions and interaction with other agencies as required by NEPA and Section 309 of the Clean Air Act; increasing emphasis on compliance of Federal agencies with Federal environmental statutes; developing and implementing an Agency policy with Indian tribes relating to environmental issues on reservation lands.



Office of Policy, Planning & Evaluation

AGENCY MANAGEMENT
Office of Policy, Planning & Evaluation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM					

Program Management - Policy, Planning And Evaluation					
Salaries & Expenses	\$823.8	\$908.5	\$889.1	\$893.7	\$4.6
TOTAL	\$823.8	\$908.5	\$889.1	\$893.7	\$4.6
Integrated Environmental Management Program					
Salaries & Expenses	\$2,846.8	\$2,956.8	\$2,932.3	\$2,999.3	\$67.0
TOTAL	\$2,846.8	\$2,956.8	\$2,932.3	\$2,999.3	\$67.0
Office of Policy Analysis					
Salaries & Expenses	\$8,604.5	\$11,770.9	\$10,548.7	\$10,915.3	\$366.6
Abatement Control and Compliance		\$5,700.0	\$6,895.0	\$6,200.0	-\$695.0
TOTAL	\$8,604.5	\$17,470.9	\$17,443.7	\$17,115.3	-\$328.4
Office of Standards & Regulations					
Salaries & Expenses	\$5,132.4	\$5,319.5	\$5,189.2	\$5,493.0	\$303.8
TOTAL	\$5,132.4	\$5,319.5	\$5,189.2	\$5,493.0	\$303.8
Office of Management Systems & Evaluation					
Salaries & Expenses	\$2,824.6	\$2,990.9	\$2,921.3	\$3,052.8	\$131.5
TOTAL	\$2,824.6	\$2,990.9	\$2,921.3	\$3,052.8	\$131.5
Pollution Prevention Program					
Salaries & Expenses		\$233.4	\$636.3	\$664.8	\$28.5
Abatement Control and Compliance		\$4,000.0	\$4,951.6	\$4,500.0	-\$451.6
TOTAL		\$4,233.4	\$5,587.9	\$5,164.8	-\$423.1
TOTAL:					
Salaries & Expenses	\$20,232.1	\$24,180.0	\$23,116.9	\$24,018.9	\$902.0
Abatement, Control and Compliance		\$9,700.0	\$11,846.6	\$10,700.0	-\$1,146.6
Office of Policy, Planning & Evaluation	TOTAL \$20,232.1	\$33,880.0	\$34,963.5	\$34,718.9	-\$244.6

AGENCY MANAGEMENT
Office of Policy, Planning & Evaluation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

PERMANENT WORKYEARS					

Program Management - Policy, Planning And Evaluation	12.8	13.9	13.9	14.8	9
Integrated Environmental Management Program	13.2	16.0	16.0	18.9	2.9
Office of Policy Analysis	49.8	57.0	54.4	64.3	9.9
Office of Standards & Regulations	58.3	61.9	59.8	64.5	4.7
Office of Management Systems & Evaluation	47.4	51.6	50.3	51.9	1.6
Pollution Prevention Program		5.0	9.7	9.7	
TOTAL PERMANENT WORKYEARS	181.5	205.4	204.1	224.1	20.0
TOTAL WORKYEARS					

Program Management - Policy, Planning And Evaluation	14.8	14.8	14.8	14.8	
Integrated Environmental Management Program	18.8	18.9	18.9	18.9	
Office of Policy Analysis	59.2	64.9	62.3	64.3	2.0
Office of Standards & Regulations	66.4	66.6	64.5	64.5	
Office of Management Systems & Evaluation	51.0	53.2	51.9	51.9	
Pollution Prevention Program		5.0	9.7	9.7	
TOTAL WORKYEARS	210.2	223.4	222.1	224.1	2.0

MANAGEMENT AND SUPPORT

Agency Management

Office of Policy, Planning and Evaluation

Budget Request

The Agency requests a total of \$34,718,900 supported by 224.1 total workyears for 1990, a decrease of \$244,600 and an increase of 2.0 total workyears from 1989. Of the request \$24,018,900 will be for the Salaries and Expenses appropriation and \$10,700,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of \$902,000 and a decrease of \$1,146,600 in the Abatement, Control, and Compliance appropriation.

PROGRAM MANAGEMENT - POLICY, PLANNING AND EVALUATION

1990 Program Request

The Agency requests a total of \$893,700 supported by 14.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$4,600 and no change in total workyears. The increase reflects increased personnel and support costs.

This request will provide the Assistant Administrator with sufficient staff and resources for the policy direction, special analyses, human resources initiatives, and budgetary and administrative support necessary to manage Office of Policy, Planning and Evaluation and its component offices efficiently and effectively. It also will enable the Agency to respond appropriately to General Accounting Office evaluations of EPA programs.

1989 Program

In 1989, the Agency is allocating a total of \$889,100 supported by 14.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. This program is providing overall policy direction and conducting the activities necessary to manage the component offices of OPPE.

1988 Accomplishments

In 1988, the Agency obligated a total of \$823,800 supported by 14.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation. These funds supported the basic budgetary, administrative, analytic, and planning activities necessary to manage OPPE.

INTEGRATED ENVIRONMENTAL MANAGEMENT PROGRAM (IEMP)

1990 Program Request

The Agency requests a total of \$2,999,300 supported by 18.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$67,000 and no change in total workyears from 1989. The increase reflects increased personnel and support costs.

IEMP will disseminate the knowledge and experience from a limited number of completed state/Regional demonstration projects designed as models for transferring multi-media, risk-based environmental management methods to the states, Regions, and Indian tribes. Specific products include: state/Regional use of risk-based tools and integrated environmental management processes to set environmental management priorities; state/Regional implementation of environmental action plans based on those priorities; and institutionalization of a negotiation process between state, Regional and national program managers which appropriately reflects an efficient balance of Federal/local partnership to address environmental issues and provide the basis for measuring the value of pollution control action.

IEMP also will concentrate on improving the links between scientific research and information needed for policy-making. It will sponsor projects which expand risk analysis to account for ecological effects. The program will work with other Agency offices to develop more realistic exposure data and exposure assumptions, and will support future regulatory activities such as management of contaminated sediments in near coastal waters and identification and assessment of the ecological impacts at Resource Conservation and Recovery Act waste sites. Finally, it will work with program offices to develop better methods for evaluating the wide range of human health effects associated with subchronic exposures to pollution and better guidance for incorporating uncertainty in risk assessment and risk management.

1989 Program

In 1989, the Agency is allocating a total of \$2,932,300 supported by 18.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

IEMP is completing a limited number of state and Regional demonstration projects designed as models for transferring multi-media, risk-based environmental management methods to the states and Regions. Non-participating states and Regions are receiving some technical assistance. IEMP also is helping states and Regions to use risk analysis techniques and is helping to improve the link between scientific research and policy-making. Current projects include: development of weight-of-evidence classification and potency estimation procedures for non-cancer effects; increased standardization of methods and models used for exposure assessment; creation of classification schemes for addressing scientific uncertainty in cross-media comparative risk analysis; development of specific criteria for evaluating environmental threats posed by contaminated sediments; and identification of biological parameters that can be used to define and project the effectiveness of EPA regulatory programs.

1988 Accomplishments

In FY 1988, the Agency obligated a total of \$2,846,800 supported by 18.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

IEMP completed the Denver project and began the transition from these methodology-building, site-specific pollution control initiatives to institutionalization of cross-media risk, cost analysis, and decision-making by sponsorship of five state-level and Regional integration programs and through technical assistance to non-program states and Regions. This institutionalization work was carried out in the States of Pennsylvania and Colorado, in Regions I, III, and X, and for the Turtle Mountain Band of Chippewa Indians. Work on developing quantitative methods to assess non-cancer health effects was performed. IEMP also undertook case studies of the risk assessments for two chemicals to provide decision-makers with a better understanding of the uncertainties and margins of safety in Agency risk assessments. To more accurately reflect actual exposure conditions and risks, a study of risks from air toxics was completed.

OFFICE OF POLICY ANALYSIS (OPA)

1990 Program Request

The Agency requests a total of \$17,115,300 supported by 64.3 total workyears for this program, of which \$10,915,300 will be for the Salaries and Expenses appropriation and \$6,200,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$366,600 and a decrease of \$695,000, respectively, and an increase of 2.0 total workyears from 1989. The increases in Salaries and Expenses reflect increased personnel and support costs and expanded efforts in global climate change. The decrease in Abatement, Control and Compliance reflects the one-time cost associated with the 1989 National Academy of Sciences global climate study.

With these resources, OPA will analyze EPA's highest priority regulatory actions and non-regulatory initiatives, focussing particularly on issues identified as posing high risks to health, environment and public welfare. OPA will analyze proposed Clean Air Act (CAA) amendments, especially in the areas of acid rain and air toxics, and analyze costs and environmental benefits of key air regulations under development. OPA will assist in the analysis and implementation of the State Clean Water Strategy, the EPA Ground-water Strategy, oceans initiatives and coordination of water and hazardous waste policies, Resource Conservation and Recovery Act Subtitle D and corrective action programs. OPA also will provide important support in the area of Title III and related activities. OPA will continue to perform economic analyses with emphasis on use of benefit/cost evaluations in state water quality reports and on impacts of EPA regulations on different sectors of the economy. The Economic Research Program will determine economic damages to materials and waterbodies from acid precipitation, and the economic value of ground-water protection.

OPA will have lead responsibility for important aspects of an expanded Agency global climate change program, working closely with the Offices of Research and Development (ORD) and Air and Radiation (OAR). The OPPE program will have a strong interagency focus. It will build on the reports to Congress, work with and integrate other EPA activities, position the Agency to evaluate all policy options, and provide stimulus to expand international understanding and involvement in response to strategy issues. Primary activities will involve data gathering, analysis of reduction strategies, and adaptation of policy analyses.

Work in environmental resources will focus on improving integration of agricultural and environment policies through review of the Food and Drug Administration and the Departments of Agriculture (USDA) and Interior regulations and review of agriculture legislative proposals. OPA also will assist USDA to implement aspects of the Conservation Reserve Program. Work on risk assessment/management/communication will focus on training for EPA staff; technical assistance to program and Regional offices; support to the Risk Assessment Council, the Risk Assessment Forum and the Center for Risk Management; and other activities to improve the Agency's performance in this area. OPA will coordinate this work with other related OPPE efforts.

1989 Program

In 1989, the Agency is allocating a total of \$17,443,700 supported by 62.3 total workyears for this program, of which \$10,548,700 is from the Salaries and Expenses appropriation and \$6,895,000 is from the Abatement, Control and Compliance appropriation.

OPA is analyzing EPA's highest priority regulatory actions and non-regulatory initiatives, which include policy implications of the National Acid Precipitation Program's final report, implementation issues for the chlorofluorocarbons (CFCs) control and tropospheric ozone programs, integrated water quality-based targeting strategy implementation, cross-media impacts of solid wastes and hazardous substances, and industrial wastes under Subtitle D. Benefit/cost analyses required under Executive Order (E.O.) 12291 are continuing in all program areas and the Economic Research Program is helping to develop new analytical methods to improve risk management. Work on risk assessment/management/communication is focussed on training for EPA staff and technical assistance to program and Regional offices as well as support for the Center for Risk Management.

In the area of global climate change, OPA is working closely with the ORD and OAR to complete and follow up on two major reports to Congress: "Policy Options for Stabilizing Climate" and the "Environmental Effects of Climate Change." OPA also is working with other agencies and organizations on climate issues, representing EPA in the Interagency National Climate Program and at conferences sponsored by the World Meteorological Organization and United Nations Environmental Programme. It is refining the analytical framework for analyzing stabilization, building modeling systems for effects, and studying adaptive responses.

1988 Accomplishments

In 1988, the Agency obligated a total of \$8,604,500 supported by 59.2 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

With these resources, OPA focused on new stationary and mobile source controls, stratospheric ozone protection, drinking water standards, non-point sources, Subtitle D regulations for industrial landfills and mining waste regulations, and other high-priority regulatory efforts. Work in the area of global climate change included drafting two reports to Congress, developing the initial framework for estimating future concentrations of trace gases and global temperatures, and analyzing the impact of climate change. OPA oversaw implementation of E.O. 12291; and its Economic Research Program worked on major projects on pesticides policy and improved morbidity risk valuation. OPA continued its efforts to improve EPA's performance in the areas of risk assessment, risk management, and risk communication.

OFFICE OF STANDARDS AND REGULATIONS (OSR)

1990 Program Request

The Agency requests a total of \$5,493,000 supported by 64.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$303,800 and no change in total workyears from 1989. The increase reflects increased personnel and support costs.

OSR will continue to administer the Agency's internal regulation review and analysis process and to provide quality control and clearance for all EPA reporting and recordkeeping required of the public. It will review regulatory and policy documents for compliance with Executive Orders (E.O.) 12291, 12498, 12630 and 12612, the Regulatory Flexibility Act, the amended Paperwork Reduction Act (PRA) and Federal Register requirements. OSR will provide training in regulation development to program and Regional offices, and will investigate application of expert systems in regulatory decisionmaking and increased use of computer conferencing to facilitate full participation in rulemaking. OSR will provide expert statistical support to the program and Regional offices and foster implementation of Data Quality Objectives. Emphasis in Title III support will progress from management of data collection to evaluation of program effectiveness. Support for the Office of Pesticides and Toxic Substances (OPTS) will emphasize policy development for control of harmful chemicals and oversight of EPA's biotechnology program and move toward resolution of indemnification issues and problems associated with disposal of cancelled pesticides.

1989 Program

In 1989, the Agency is allocating a total of \$5,189,200 supported by 64.5 workyears for this program, all of which is from the Salaries and Expenses appropriation.

OSR continues to administer and direct the Agency's internal regulation review and analysis process and to provide quality control and clearance for all EPA reporting and recordkeeping required of the public. It reviews regulatory and policy documents for compliance with all applicable requirements. OSR is expanding its regulation development course audience to include the Regions and additional program offices. Through highly specialized statistical consultation and support, OSR is aiding programs in improving survey design, sampling, monitoring and data analysis methods. OSR is assisting enforcement offices in developing optional enforcement inspection strategies and supports implementation of Data Quality Objectives. OSR promotes the use of consultative and consensual activities in issue resolution, decisionmaking and negotiation. Regulatory innovation is focusing on provision of technical assistance to Regions/states in identifying and controlling non-point sources of pollution and on identification and promotion of integrated waste management alternatives to reduce the volume of waste. Pesticides support is emphasizing assistance to the program office in meeting the demands of the 1988 amendments to the Federal Insecticide, Fungicide and Rodenticide Act and analysis in the area of toxic substances is concentrating on development of an Agency policy on testing chemicals.

1988 Accomplishments

In 1988, the Agency obligated a total of \$5,132,400 supported by 66.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

With these resources, OSR ensured compliance with the Executive Orders, the amended PRA, and other requirements by continuing its technical, statistical and policy review of existing regulations as well as those under development. OSR developed a training course on regulation development in EPA and presented it to several program offices. It effectively promoted the value of statistical analysis in support of EPA decisionmaking and sponsored training and a national conference on environmental statistics. OSR promoted negotiation as an alternative to formal rulemaking and expanded active assistance and participation in the use of consensual techniques. Regulatory innovation efforts resulted in initiation of a work group to address proliferation of EPA lists of toxic chemicals and provided information, analysis and preliminary products to support initiation of the Pollution Prevention Office. OSR continued oversight and support of OPTS, participating directly in rulemaking for OPTS's biotechnology rule and in development of reports to Congress on asbestos in public schools and public buildings. OSR also contributed to development of a new approach to pesticide regulation with respect to ground-water contamination and introduced the use of cost-effectiveness analysis in decisionmaking.

OFFICE OF MANAGEMENT SYSTEMS AND EVALUATION (OMSE)

1990 Program Request

The Agency requests a total of \$3,052,800 supported by 51.9 total workyears for this program, all of which will be for the Salaries and Expenses

appropriation. This represents an increase of \$131,500 and no change in total workyears from 1989. The increase reflects increased personnel and support costs.

Improvements in EPA's management systems will focus on developing strategies for EPA programs that define specific environmental goals that can be tracked over time. In addition to work on selected programs' strategies, OMSE will work with the hazardous waste, ground water, nonpoint source, and pollution prevention programs to define appropriate environmental indicators that complement the programs' goals. Other efforts will focus on improving EPA's priority-setting process and link budget decisions more closely with health and environmental priorities. Evaluation projects will include problem assessments and problem-solving projects in several EPA program areas, including municipal and other solid waste, air toxics, ground-water contamination, and infectious waste, as well as reviews of state/EPA interactions in selected programs.

1989 Program

In 1989, the Agency is allocating a total of \$2,921,300 supported by 51.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

OMSE is managing the Agency's planning and management system and adapting it to meet new management objectives. OMSE is supporting development of an Agencywide strategy that will articulate both management and environmental goals for each major program and enable the Administrator to track progress over time and evaluate the effectiveness of the programs. OMSE is demonstrating and promoting ways to use existing environmental data for problem assessment, priority setting, and program evaluation at national, Regional and local levels and will conduct a seminar on effective ways to manage for environmental results. OMSE also plans demonstration projects in two to four states to test ways to improve the use of environmental information in decisions concerning water resources and pesticide contamination. Evaluation projects include the development and evaluation of inexpensive methods of motivating people to test their homes for radon, an effort to define the roles of Headquarters and Regional offices in implementing the Pesticides in Ground-water Strategy, an examination of the process by which Federal agencies request funding for pollution abatement and clean-up projects, and an evaluation of a pilot test of differential oversight in the National Pollutant Discharge Elimination System program under the Clean Water Act.

1988 Accomplishments

In 1988, the Agency obligated \$2,824,600 supported by 51.0 total workyears, all of which was from the Salaries and Expenses appropriation.

OMSE managed the Agency's two core program management processes, the Strategic Planning and Management System and the Action Tracking System. With the National Oceanic and Atmospheric Administration, the Office of Water, and the appropriate Regional offices, OMSE developed an analysis of near coastal waters in Region I and a statewide analysis of surface and ground-water resources in the State of Oregon. It improved the national priority-setting

process by ensuring Headquarters managers took into account the region-specific health and environmental priorities of the Regions and states. OMSE also prepared an update of the 1984 document, "Environmental Progress and Challenges", the only comprehensive EPA report on environmental conditions and trends in each of Agency's major programs. Evaluation projects included assessments of EPA's experience with negotiated rulemaking, state/EPA relations in delegated programs, options for setting up a waste minimization clearinghouse, policy options for regulating hazardous waste exports, and compliance monitoring strategies developed to guide enforcement of pesticides regulatory actions. OMSE also assisted the Office of Underground Storage Tanks (OUST) in developing a long-term program plan.

POLLUTION PREVENTION PROGRAM (PPP)

1990 Program Request

The Agency requests a total of \$5,164,800 supported by 9.7 total workyears for this program, of which \$664,800 will be for the Salaries and Expenses appropriation and \$4,500,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$28,500 and a decrease of \$451,600, respectively, and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in Abatement, Control and Compliance reflects the award of one-time state grants used to initiate State pollution prevention programs.

PPP will continue to pursue the four goals identified and initiated in 1989, but with a more focused agenda. Agency products will include availability of information through a national clearinghouse and a hotline on technologies, substitutions, and approaches that are known to be effective for specific industries and facilities as well as recommendations on how to create additional incentives for pollution prevention and how to eliminate existing barriers. Support of state pollution prevention programs through the distribution of multi-media grants will continue. In addition, the Office will evaluate existing state pollution prevention programs to be used by the states and EPA as a future planning and priority-setting tool. The program also will continue to work on developing reliable indicators of waste reduction and pollution prevention. Data collected from the Superfund Amendments and Reauthorization Act, section 313, and from other Agency data bases will be used to begin to identify national trends and to target areas of opportunity.

1989 Program

In 1989, the Agency is allocating a total of \$5,587,900 supported by 9.7 total workyears for this program, of which \$636,300 is from the Salaries and Expenses appropriation and \$4,951,600 is from the Abatement, Control and Compliance appropriation.

PPP is working to meet four specific goals: (1) communicating to state and local governments, industry, public interest groups, citizen groups, Congress, Federal agencies and other appropriate organizations the need for and capability to achieve pollution prevention and source reduction initiatives; (2) developing a multi-media approach through regulatory review of incentives and disincentives for pollution prevention and through creation of media-

specific pollution prevention plans; (3) encouraging state and local programs through distribution of grant dollars to state programs to support state pollution prevention programs and through creation of networks of technical experts available to local governments; and (4) evaluating progress and targeting opportunities through development of reliable indicators of pollution prevention and implementation of a data collection strategy. A product of this first year's work is a national pollution prevention strategy which ties the four objectives together and involves industry, public interest groups, Federal

agencies, and other interested organizations in its design, development and implementation.

1988 Accomplishments

In 1988, the Agency obligated no dollars and no workyears for this program.



Office of Administration and Resources Management

AGENCY MANAGEMENT
Office of Administration & Resources Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Program Management -					
Administration					
Salaries & Expenses	\$1,380.9	\$1,461.6	\$1,460.1	\$1,540.5	\$80.4
TOTAL	\$1,380.9	\$1,461.6	\$1,460.1	\$1,540.5	\$80.4
Financial Management					
Headquarters					
Salaries & Expenses	\$7,566.1	\$6,396.5	\$7,870.2	\$8,335.6	\$465.4
TOTAL	\$7,566.1	\$6,396.5	\$7,870.2	\$8,335.6	\$465.4
Office of the					
Comptroller					
Salaries & Expenses	\$4,515.2	\$6,492.1	\$5,033.4	\$6,661.0	\$1,627.6
Abatement Control and Compliance			\$500.0	\$500.0	
TOTAL	\$4,515.2	\$6,492.1	\$5,533.4	\$7,161.0	\$1,627.6
Contracts and Grants					
Management					
Salaries & Expenses	\$10,389.6	\$10,177.0	\$10,204.8	\$11,757.8	\$1,553.0
TOTAL	\$10,389.6	\$10,177.0	\$10,204.8	\$11,757.8	\$1,553.0
Organization and Health					
Services					
Salaries & Expenses	\$8,114.7	\$2,560.6	\$2,490.5	\$2,886.8	\$396.3
TOTAL	\$8,114.7	\$2,560.6	\$2,490.5	\$2,886.8	\$396.3
Facilities & Management					
Services					
Salaries & Expenses	\$6,930.4	\$7,083.3	\$7,111.2	\$8,094.8	\$983.6
TOTAL	\$6,930.4	\$7,083.3	\$7,111.2	\$8,094.8	\$983.6

AGENCY MANAGEMENT
Office of Administration & Resources Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
Information Systems & Services					
Salaries & Expenses	\$8,867.0	\$8,776.3	\$8,993.7	\$10,118.1	\$1,124.4
Abatement Control and Compliance			\$999.2	\$1,000.0	\$.8
TOTAL	\$8,867.0	\$8,776.3	\$9,992.9	\$11,118.1	\$1,125.2
Office of Human Resources Management					
Salaries & Expenses	\$1,897.1	\$7,586.3	\$8,005.5	\$9,403.3	\$1,397.8
TOTAL	\$1,897.1	\$7,586.3	\$8,005.5	\$9,403.3	\$1,397.8
TOTAL:					
Salaries & Expenses	\$49,661.0	\$50,533.7	\$51,169.4	\$58,797.9	\$7,628.5
Abatement Control and Compliance			\$1,499.2	\$1,500.0	\$.8
Office of Administration & Resources Management					
TOTAL	\$49,661.0	\$50,533.7	\$52,668.6	\$60,297.9	\$7,629.3
PERMANENT WORKYEARS					

Program Management - Administration	20.8	24.0	24.0	24.8	.8
Financial Management Headquarters	127.3	135.0	134.6	139.9	5.3
Office of the Comptroller	70.1	70.0	83.7	84.4	.7
Contracts and Grants Management	218.5	222.1	221.1	239.3	18.2
Organization and Health Services	161.3	44.0	43.1	46.1	3.0
Office of Human Resources Management	27.2	148.7	154.7	177.6	22.9

AGENCY MANAGEMENT
Office of Administration & Resources Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
Facilities & Management Services	159.5	168.9	168.9	175.9	7.0
Information Systems & Services	141.8	146.9	151.3	164.1	12.8
TOTAL PERMANENT WORKYEARS	926.5	959.6	981.4	1,052.1	70.7

TOTAL WORKYEARS					
Program Management - Administration	25.3	24.8	24.8	24.8	
Financial Management Headquarters	131.8	140.3	139.9	139.9	
Office of the Comptroller	73.8	72.0	85.7	84.4	-1.3
Contracts and Grants Management	226.1	226.3	225.3	239.3	14.0
Organization and Health Services	180.6	47.0	46.1	46.1	
Facilities & Management Services	169.3	175.9	175.9	175.9	
Information Systems & Services	149.6	151.7	156.1	164.1	8.0
Office of Human Resources Management	27.8	161.6	167.6	177.6	10.0
TOTAL WORKYEARS	984.3	999.6	1,021.4	1,052.1	30.7

MANAGEMENT AND SUPPORT

Agency Management

Office of Administration and Resources Management

Budget Request

The Agency requests a total of \$238,370,100 supported by 1,052.1 total workyears for 1990, an increase of \$34,651,000 and 30.7 total workyears from 1989. Of the request, \$236,870,100 will be for the Salaries and Expenses appropriation and \$1,500,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of \$34,650,200 and an increase of \$800 in the Abatement, Control and Compliance appropriation.

PROGRAM MANAGEMENT - ADMINISTRATION

1990 Program Request

The Agency requests a total of \$1,540,500 supported by 24.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$80,400 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. In 1990, the office will continue to provide guidance and direction as well as program and administrative support for OARM, direct and manage OARM's resources, administer and report on OARM's portions of the Administrator's Action Tracking System and the Strategic Planning and Management System, and conduct strategies to enhance the efficiency and effectiveness of the Agency. This office will also coordinate and consolidate OARM's internal control reporting, ensure compliance with the Freedom of Information Act and Agency audit recommendations, and oversee OARM information management needs.

1989 Program

In 1989, the Agency is allocating a total of \$1,460,100 supported by 24.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are used for overall policy direction and guidance to the Agency's management programs, budget development and execution, review of organization and consolidation issues, continued strengthening of EPA's financial, budgetary, contracts, and information resources management programs, as well as initiation of management effectiveness strategies within the Agency.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,380,900 supported by 25.3 total workyears for this program all of which was from the Salaries and

Expenses appropriation. These resources were used to provide office-wide management and policy direction, manage the development and execution of OARM's budget, provide Action Tracking and Strategic Planning and Management reports, coordinate internal control reporting and responses to Freedom of Information Act requests, and conduct special analyses and projects on Agencywide management issues.

FINANCIAL MANAGEMENT - HEADQUARTERS

1990 Program Request

The Agency requests a total of \$8,335,600 supported by 139.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$465,400 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The Office's major priority for 1990 is to implement and integrate administrative systems in support of OMB Circular A-127. The installation will require additional data analysis, module testing, and policies and procedures; contract management support; and training of Headquarters and regional staff. Other initiatives include: (1) Strengthening the integrity of basic operations by supporting initiatives that improve the delivery of financial services to clients and implement strong quality assurance for all functions and locations; (2) Improving analytic and reporting capabilities by developing a program directed at improving financial data analysis and enhancing reporting capabilities; and (3) Maintaining a long range strategic planning program to enable the Division to identify future objectives and achieve them in a planned and logical manner. This request will also allow Headquarters, Cincinnati, Las Vegas and Research and Triangle Park offices to provide necessary financial accounting and fiscal services.

1989 Program

In 1989, the Agency is allocating a total of \$7,870,200 supported by 139.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources provide a full array of financial services to EPA managers, including: payroll, accounting, debt collection, accounts payable and policy guidance. This program also manages the Agency's Financial Management System. The 1989 program emphasis is on implementing the Office of Management and Budget's Circular A-127 requirements, implementing Section 4 of the Federal Managers' Financial Integrity Act of 1982, increasing the timeliness of payments processed as required by the Prompt Payment Act, exploring further cash management initiatives, and bringing the Financial Management System into full compliance with General Accounting Office standards.

1988 Accomplishments

In 1988, the Agency obligated a total of \$7,566,100 supported by 131.8 total workyears, all of which was from the Salaries and Expenses appropriation. With these resources, the Agency improved the financial services provided by Headquarters and Research Triangle Park financial operations, developed standard quality assurance programs for the Agency, developed a long-term planning process for the Financial Management System, completed a Comptroller

Directives System for consolidation of all financial policies and procedures, and transferred the software programs to operate the Financial Management System to the National Computer Center.

OFFICE OF THE COMPTROLLER

1990 Program Request

The Agency requests a total of \$7,161,000 supported by 84.4 total workyears for this program. Of the request, \$6,661,000 will be for the Salaries and Expenses appropriation and \$500,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of \$1,627,600 and decrease of 1.3 total workyears in the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance appropriation from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in workyears reflects a shift in emphasis in the fees initiative to a more decentralized approach. We will continue implementation of OMB Circular A-127, a major initiative which will integrate and improve the Agency's financial management systems, support of the Agency's Public-Private Partnership efforts and an enhanced level of support for the Agency's productivity activities.

These resources will provide the Office of the Comptroller with the capabilities to perform all mandatory activities associated with OMB and Congressional budget submissions for 1991 and 1992, provide budget analyses and reports to Agency program offices through the Resource Planning and Budgeting System, and maintain an allocation, control and review system for all workyear and financial resources. The office will continue its focus on maintaining of EPA's Productivity Improvement Program, which will reduce costs and enhance program effectiveness across the Agency. The Comptroller will also continue to implement the Federal Managers' Financial Integrity Act, and implement OMB Circular A-76.

1989 Program

In 1989, the Agency is allocating a total of \$5,533,400 supported by 85.7 total workyears for this program, of which \$5,033,400 is from the Salaries and Expenses appropriation and \$500,000 is from the Abatement, Control and Compliance appropriation. With these resources the Office of the Comptroller prepares the 1990 budget request, develops current and outyear budget guidance to program and Regional offices, analyzes budget issues, develops and implements Agency budget policy, and administers and provides policy guidance to EPA managers on a range of fiscal concerns.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,515,200 supported by 73.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, this program managed the development of the 1989 Operating Plans, provided budget and policy guidance to Program and Regional offices for the 1990 budget request, performed oversight of audit resolution and follow-up, implemented the Federal Managers' Financial Integrity Act, and continued EPA's Productivity Improvement Program.

CONTRACTS AND GRANTS MANAGEMENT - HEADQUARTERS

1990 Program Request

The Agency requests a total of \$11,757,800 supported by 239.3 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$1,553,000 and an increase of 14.0 total workyears from 1989. The increase in workyears will fund contract placement and management support for the RCRA program. In the contracts area, the request will enable the Agency to process and award new contracts and purchase orders, manage and close out existing contracts, evaluate contractor cost proposals, process contract terminations and claims, and provide technical review, policy compliance, and administrative oversight and management to the three procurement operations in Headquarters, Cincinnati, and Research Triangle Park (RTP). In the grants area, these funds will allow the Agency to develop and interpret policy and procedural guidance for Agencywide assistance programs, award and administer Headquarters grants and loans, cooperative agreements, and interagency agreements, provide outreach to the regions, states and federal assistance recipients, continue to modify, update, and simplify our assistance regulations, continue inhouse audit and cost analyses, increase our noncompliance efforts against program participants who abuse the privilege of Federal assistance, implement the Federal Technology Transfer Act, and enhance the role of the Agency's Grants Information System Management Council.

1989 Program

In 1989, the Agency is allocating a total of \$10,204,800 supported by 225.3 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to perform a full range of grants and contract activities including awarding and managing contracts, grants, loans, purchase orders, and interagency agreements. This also includes negotiating indirect cost rates, processing terminations and claims, managing procurement operations at Headquarters, Cincinnati and RTP, developing suspension and debarment cases under the EPA assistance and procurement program, addressing policy development, internal review and systems management issues in both contracts and grants areas, implementing new State Revolving Fund policy, implementing a new automated assistance document system, and providing project and contracting officer training.

1988 Accomplishments

In 1988, the Agency allocated a total of \$10,389,600 supported by 226.1 total workyears for this program, all of which was from the Salaries and Expenses appropriation. The major accomplishments in this program area included increased emphasis on contract management, continued implementation of the Federal Acquisition Regulation, improvement of the contract planning system and automated procurement and grants document systems, issuance of additional awards for the Asbestos School Hazard Abatement Program, and development of a Grants Information System Management Council. We also published the final rule of a government-wide debarment and suspension regulation, took noncompliance actions and recovered Federal funds from program participants who abused the privileges of Federal assistance, and developed and issued policy and guidance for the State Revolving Fund.

ORGANIZATION AND HEALTH SERVICES

1990 Program Request

The Agency requests a total of \$2,886,800 supported by 46.1 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$396,300 and no change in total workyears from 1989. The increase in the Salaries and Expenses reflects increased personnel and support costs. In addition, we will expand our efforts to ensure that Agency organizations, management systems and processes are as efficient and effective as possible by conducting management and organization analytical studies; overseeing the Agency's Directives system; managing the development and review of Agencywide delegations of authority and reorganizations; managing the Agency's public advisory committees; administering management support contracts; and providing technical assistance on management and organization issues. The Agency will continue to coordinate the management of the planning, design, construction and move process for a new consolidated Agency Headquarters and focus on construction planning and coordination. Particular emphasis will be placed on oversight of interior/exterior design. Our environmental compliance program will continue to perform audits and provide technical assistance and training to Agency laboratories. Waste minimization will be a new area receiving emphasis. Our health and safety program will continue to monitor Agency workspace for safe and healthful working conditions and provide technical assistance and training.

1989 Program

In 1989 the Agency is allocating a total of \$2,490,500 supported by 46.1 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources provide high quality management assistance to all Agency organizations. We will design an automated Agency reference system to provide current information essential to the Agency's evolving mission. Management assistance will enable the Agency to respond to complex environmental issues such as source reduction, technology transfer, and alternative financing mechanisms. Delegations of authority and organizational analyses will strive towards strengthening management processes and streamlining organizations. Planning for the new Headquarters facility will involve identification and selection of a developer who best meets the Agency's functional requirements and refinement of specific design characteristics. An environmental compliance manual and model program will be established for Agency laboratories. Environmental compliance audits will focus on Agency laboratories with prior problems. Our health and safety program will concentrate on improving the indoor air quality of our facilities, implementing and monitoring asbestos operations and maintenance programs, and reviewing the drinking water in our facilities to ensure safe levels of lead.

1988 Accomplishments

In 1988, the Agency obligated a total of \$8,114,700 supported by 180.6 total workyears for this program, all of which was from the Salaries and Expenses appropriation. A comprehensive review of EPA's organizational history, legislative responsibilities, and priorities was prepared to facilitate the management transition to the incoming Administration.

Management and contract assistance resulted in a series of organizational and management improvements for Agency responsibilities required by current and new environmental legislation. Additionally, technical support resulted in the establishment of the National Advisory Council for Environmental Technology Transfer. The planning process for the new Headquarters facility involved establishment of detailed technical requirements, and compilation of site analysis information. Environmental compliance program evaluation, training and technical support was provided to our laboratories, and Agency health and safety programs were reviewed. A health and safety model and asbestos operation and maintenance plans were also developed. The Agency also simplified its workforce planning methodology and accepted some delegated authority and implemented employment flexibility to streamline the employment process. The Agency implemented a comprehensive program to provide continuous assistance on the Federal Employee Retirement Systems (FERS) and Civil Service Retirement Systems Programs, and consolidated direct contact personnel services for Headquarters employees in a one-stop Human Resources Service Center. Resources supported improvement and utilization of personnel data information systems and provided continuing support to meet the Agency's special recruitment needs.

FACILITIES AND MANAGEMENT SERVICES

1990 Program Request

The Agency requests a total of \$8,094,800 supported by 175.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$983,600 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. With these resources the Agency will administer the Nationwide Support, Headquarters Support, and Buildings and Facilities budgets, provide operational support and housekeeping services, and monitor and direct contractor resources under support contracts.

1989 Program

In 1989, the Agency is allocating a total of \$7,111,200 supported by 175.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These funds are being used to provide timely, high quality and cost effective facilities management and support services for EPA facilities in Washington, Research Triangle Park (RTP), North Carolina and Cincinnati, Ohio. These resources provide ongoing services in the areas of property and space management, building operational services, office support services, real estate and lease enforcement support, transportation management, printing and publication operations, security services, and facilities design and construction management.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,930,400 supported by 169.3 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources the Agency provided responsive facilities management services to EPA facilities in Washington, RTP and Cincinnati, established better administrative controls over property management, and effectively managed space needs. We also initiated planning

for the new Headquarters facility, improved ventilation throughout Waterside Mall and provided effective security services. In addition, 165 acres of land were acquired at Edison, New Jersey to support research activities. This program supervised the design and construction of a new water quality monitoring field station in Newport, Oregon; the design of the clinical inhalation research lab in Chapel Hill, North Carolina; the construction of the radiation laboratory in Montgomery, Alabama; and the construction of the hazardous waste containment laboratory in Cincinnati, Ohio.

INFORMATION SYSTEMS AND SERVICES

1990 Program Request

The Agency requests a total of \$11,118,100 supported by 164.1 total workyears for this program. Of the request, \$10,118,100 will be for the Salaries and Expenses appropriation and \$1,000,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of \$1,124,400 and 8.0 total workyears and an increase of \$800 in the Abatement, Control and Compliance appropriation from 1989. The increase will provide for increased operating costs and increased efforts in working with States to effectively use the national data systems. The requested resources will enable the Agency to maintain current, centrally administered information systems and services in support of EPA programs and the public. This program provides the personnel to manage the Agency's central and distributed computing and data transmission network, its major administrative and programmatic data systems, and library services. In addition, these resources will permit the Agency to continue to strengthen information resources management including long and short-range Automated Data Processing (ADP) planning, ADP security, records management, software and data standards, internal controls on information resources, and systems modernization. Technical support is provided for the Regional ADP Modernization effort and emphasis is placed on improving data sharing with State environmental agencies. This program also supports Title III efforts by designing and implementing Title III reporting requirements.

1989 Program

In 1989, the Agency is allocating a total of \$9,992,900 supported by 156.1 total workyears for this program. of which \$8,993,700 and 156.1 is from the Salaries and Expenses appropriation and \$999,200 is from the Abatement, Control and Compliance appropriation. Continued efforts will be devoted to improved information systems planning by EPA programs, strengthening information security, and implementing the Integrated Financial Management System. Major progress was made to integrate State/ EPA data systems and improve the exchange of environmental data. All the states became involved in this effort through direct telecommunications link-up to the Agency's national data bases. This program also provided the requirements analysis, design, development and implementation of information systems to track emergency plans and notifications, support of the Toxic Release Inventory and the establishment of a national clearinghouse on material safety data sheets.

1988 Accomplishments

In 1988, the Agency obligated a total of \$8,256,100 supported by 147.5 total workyears for this program, all of which was from the Salaries and Expenses appropriation. During 1988, EPA continued to update its accounting systems in response to the General Accounting Office (GAO) requirements, and continued support of the regional ADP modernization program. Significant progress was made in the internal information security program and in the establishment of internal information management policy guidelines. Phase I of our State/EPA data management program data sharing was successfully implemented in over thirty states. Data integration efforts began in many of the Regions and participating States. This program also supported requirements analysis of information systems to support Title III.

HUMAN RESOURCES MANAGEMENT

1990 Program Request

The Agency requests a total of \$9,403,300 supported by 177.6 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$1,397,800 and 10.0 total workyears from 1989. The increase supports expansion of the Technology Transfer Program to States, local and tribal governments, managerial and executive development, and increased delegated examining authority for key employee groups and high priority occupations. This program will continue to perform client oriented personnel services and direction in the areas of recruitment, position management, classification, performance management, pay administration, personnel and payroll processing, labor management and employee relations, personnel information system management, Equal Employment Opportunity, and technical assistance and advisory services. It is also charged with expanding and institutionalizing the Human Resources initiatives begun during the last several years. These include: extension of the EPA Institute, creation and delivery of programs dealing with important workplace issues (e.g. AIDS, substance abuse), expansion of workforce planning and organizational programs, streamlining and simplifying employment and position classification programs, and the development and implementation of executive and management development programs as well as developmental and intern programs for critical occupations.

1989 Program

In 1989, the Agency is allocating a total of \$8,005,500 supported by 167.6 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources will provide professional and administrative recruitment services, selection and placement of new employees, centralized examination and referral services, position management, classification and job analysis, advice to management on labor management and employee relations, employee and management development services, and personnel and payroll processing. Policy guidance and national support will be provided to the Agency. These resources will allow for maintenance of personnel data and information systems. Among the Human Resources initiatives to be introduced in 1989 are the broad use of the EPA Institute to transfer technology to State, local and tribal governments and the implementation of an automated catalogue of all EPA taught courses nationwide. The Agency will also establish its own Intern Program, expand management courses to include a "Core Course for

Executives" and enhance supplemental managerial development programs. In addition, EPA will field a substance abuse training program, expand organizational development support.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,897,100 supported by 27.8 total workyears for the program, all of which was from the Salaries and Expenses appropriation. The Agency implemented and expanded key Human Resources initiatives. Among those initiatives was the expansion of the EPA Institute to regional and field locations, development of pre-supervisory training and expansion of managerial courses. The Agency also simplified its workforce planning methodology and accepted some delegated authority and implemented employment flexibility to streamline the employment process. The Agency implemented a comprehensive program to provide continuous assistance on the FERS and Civil Service Retirement System Programs, and consolidated direct contact personnel services for Headquarters employees in a one-stop Human Resources Service Center. Resources supported improvement and utilization of personnel data information systems and provided continuing support to meet the Agency's special recruitment needs.



Regional Management

SECTION TAB

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT AND SUPPORT</u>	11-1
REGIONAL MANAGEMENT	
Regional Management	11-63
Resource Management - Regions.	11-66
Financial Management - Regions	11-66
Personnel Management - Regions	11-67
Administrative Management - Regions.	11-68
Regional Management.	11-68
Regional Counsel	11-69
Planning, Evaluation and Analysis - Regions.	11-70

REGIONAL MANAGEMENT
Regional Management

		ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)						
PROGRAM						

Resource Management -						
Regions						
Salaries & Expenses		\$1,589.2	\$1,607.1	\$1,742.5	\$1,829.6	\$87.1
TOTAL		\$1,589.2	\$1,607.1	\$1,742.5	\$1,829.6	\$87.1
Financial Management -						
Regions						
Salaries & Expenses		\$3,034.8	\$2,995.5	\$2,990.7	\$3,140.2	\$149.5
TOTAL		\$3,034.8	\$2,995.5	\$2,990.7	\$3,140.2	\$149.5
Personnel Management -						
Regions						
Salaries & Expenses		\$3,756.0	\$3,650.8	\$3,648.1	\$3,830.5	\$182.4
TOTAL		\$3,756.0	\$3,650.8	\$3,648.1	\$3,830.5	\$182.4
Administrative						
Management - Regions						
Salaries & Expenses		\$6,434.4	\$6,301.4	\$6,849.4	\$7,216.4	\$367.0
TOTAL		\$6,434.4	\$6,301.4	\$6,849.4	\$7,216.4	\$367.0
Regional Management						
Salaries & Expenses		\$11,316.3	\$10,619.4	\$11,019.6	\$11,357.2	\$337.6
TOTAL		\$11,316.3	\$10,619.4	\$11,019.6	\$11,357.2	\$337.6
Regional Counsel						
Salaries & Expenses		\$4,029.9	\$4,021.1	\$3,981.4	\$4,260.0	\$278.6
TOTAL		\$4,029.9	\$4,021.1	\$3,981.4	\$4,260.0	\$278.6
Planning, Evaluation &						
Analysis - Regions						
Salaries & Expenses		\$2,853.6	\$3,654.7	\$3,713.7	\$4,091.5	\$377.8
TOTAL		\$2,853.6	\$3,654.7	\$3,713.7	\$4,091.5	\$377.8
TOTAL:						
Salaries & Expenses		\$33,014.2	\$32,850.0	\$33,945.4	\$35,725.4	\$1,780.0
Regional Management	TOTAL	\$33,014.2	\$32,850.0	\$33,945.4	\$35,725.4	\$1,780.0

REGIONAL MANAGEMENT
Regional Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PERMANENT WORKYEARS

Resource Management - Regions	36.1	37.1	37.0	40.8	3.8
Financial Management - Regions	86.7	84.7	84.5	89.5	5.0
Personnel Management - Regions	89.1	84.6	84.6	93.0	8.4
Administrative Management - Regions	151.3	161.3	176.3	188.8	12.5
Regional Management	189.1	172.3	172.5	187.0	14.5
Regional Counsel	73.5	76.8	76.3	83.0	6.7
Planning, Evaluation & Analysis - Regions	57.7	86.1	87.1	90.9	3.8
TOTAL PERMANENT WORKYEARS	683.5	702.9	718.3	773.0	54.7

TOTAL WORKYEARS

Resource Management - Regions	41.3	41.0	40.8	40.8	
Financial Management - Regions	92.7	89.7	89.5	89.5	
Personnel Management - Regions	103.7	93.0	93.0	93.0	
Administrative Management - Regions	178.5	171.8	186.8	188.8	2.0
Regional Management	214.1	186.8	187.0	187.0	

REGIONAL MANAGEMENT
Regional Management

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Regional Counsel	83.4	82.5	82.0	83.0	1.0
Planning, Evaluation & Analysis - Regions	67.9	90.1	90.9	90.9	
TOTAL WORKYEARS	781.6	754.9	770.0	773.0	3.0

MANAGEMENT AND SUPPORT

Regional Management

Budget Request

The Agency requests a total of \$35,725,400 supported by 773.0 total workyears for 1990, this is an increase of \$1,780,000 and 3 workyears from 1989. All of the request is for the Salaries and Expenses appropriation.

RESOURCE MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$1,829,600 supported by 40.8 total workyears, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$87,100 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. This level of funding supports Regional resource management and control activities, including budget and operating plan development and workload analysis. In addition, these resources will allow the Regional offices to continue implementing the Federal Managers' Financial Integrity Act and further strengthen funds control.

1989 Program

In 1989, the Agency is allocating a total of \$1,742,500 supported by 40.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to conduct budgeting and resource analysis functions in the ten Regional offices.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,589,200 supported by 41.3 total workyears for this program, all of which was from the Salaries and Expenses appropriation. These resources allowed Regional Administrators to effectively and efficiently manage their resources and operating plan processes.

FINANCIAL MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$3,140,200 supported by 89.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$149,500 and no change in workyears from 1989. The increase in Salaries and Expenses provide the capability to continue conducting internal control reviews as required by the Federal Managers' Financial Integrity Act of 1982 as well as Cash Management Reviews mandated by the Deficit Reduction Act of 1984. The acquisition of micro computers will provide the staff with the necessary tools to develop automated improvements to recurring operations. This level of funding will

allow the financial management offices to provide basic financial services and maintain ongoing financial management functions. The financial management offices will continue to provide accounting, payment processing, billings and collections for grants, travel, payroll, contracts, purchase orders, and all other financial transactions as well as payroll support and general ledger activities.

1989 Program

In 1989, the Agency is allocating a total of \$2,990,700 supported by 89.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide the Regions with accounting, payment processing, payroll support, financial reporting services, and comprehensive financial management.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,034,800 supported by 92.7 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, the Financial Management Offices provided accounting, payment processing, payroll support, financial reporting services, and comprehensive financial management.

PERSONNEL MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$3,830,500 supported by 93.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$182,400 and no change in total workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and staff costs. The resources will allow Regional personnel offices to meet basic regulatory requirements and maintain current service levels. These services include processing recruitment and classification actions, entering data and updates to the Agency's payroll system, providing advisory services and reorganization reviews, administering the grievance system, negotiating with unions, and managing the Performance Management and Recognition System.

1989 Program

In 1989, the Agency is allocating a total of \$3,648,100 supported by 93.0 total workyears to this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to formalize local human resources management programs, provide for recruitment, staffing, and classification actions, conduct position management and pay administration, process personnel and payroll transactions, administer grievance system and disciplinary action procedures, provide employment development and training, consult and negotiate with local unions, conduct special studies, and advise Regional managers on the above functions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,756,000 supported by 103.7 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, the Regional personnel offices provided ongoing personnel services to support the accomplishment of the Regions' program operations and goals, provided better training programs for Regional employees, and initiated human resources management programs.

ADMINISTRATIVE MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$7,216,400 supported by 188.8 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$367,000 and 2.0 total workyears from 1989. These resources will allow the Regions to provide administrative management services that include maintaining administrative information systems and minicomputer operations, ensuring ADP operations support for Regional programs, managing word processing equipment and ADP systems acquisition, and coordinating Regional records management. Development of State data management plans to ensure efficient and reliable methods of State/EPA data sharing will receive priority attention. In addition, this program will continue to direct contracting and purchasing activities, ensure the safety and security of Regional personnel, manage property and supplies, provide general office services, and provide program management for all support services.

1989 Program

In 1989, the Agency is allocating a total of \$6,849,400 supported by 186.8 total workyears for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide the Regions with administrative management activities in the areas of information management, small purchases and procurements, health and safety, and facilities support. This program will continue to improve methods for EPA and States to share environmental data.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,434,400 supported by 178.5 total workyears for this program, all of which was from the Salaries and Expenses appropriation. With these resources, the Regions provided administrative management services as well as implementation of information management plans to increase use of personal computers and integrate electronic telecommunications lines to achieve cost savings and productivity gains.

REGIONAL MANAGEMENT

1990 Program Request

The Agency requests a total of \$11,357,200 supported by 187.0 total workyears for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$337,600 and no additional workyears from 1989. The increase in Salaries and Expenses reflects increased personnel and support costs. The budget request will enable the Regional offices to continue to shape and articulate policy for State and local

governments; respond to inquiries from Congress, the news media and the public; establish regular communications with public interest, environmental and business groups; and maintain an effective Equal Employment Opportunity program. In 1990, regional management emphasis will be put on information coordination and dissemination of the increasing number of information requests including Freedom of Information requests, which are increasing by approximately 20 percent per year.

1989 Program

In 1989, the Agency is allocating a total of \$11,019,600 and 187.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation. Basic press services and media relations activities are being maintained as well as policy guidance and executive direction for the Region as a whole. The program will continue the processing of Freedom of Information (FOI) requests, issuing critical news releases, maintaining a Regional Equal Employment Opportunity program, responding to Congressional inquiries, and coordinating EPA involvement in major State environmental issues.

1988 Accomplishments

In 1988, the Agency obligated \$11,316,300 and 214.1 total workyears for this program, all of which was from the Salaries and Expenses appropriation. This program provided support for the Regional Administrators and their immediate staffs, as well as for the basic staff functions of public affairs, Congressional and intergovernmental activities, and the equal employment opportunity function.

REGIONAL COUNSEL

1990 Program Request

The Agency requests a total of \$4,260,000 supported by 83.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$278,600 and an increase of 1.0 total workyears from 1989. The increase will provide for additional legal support to Regional Clean Air Act activities, and for increased personnel and support costs.

The Offices of Regional Counsel (ORC) will continue to handle defensive litigation involving principally Regional issues. They will provide advice and counsel to Regional programs; review Regional rulemaking actions; assist states by reviewing State program delegations and advising State agencies on obtaining adequate legal authorities; and support Agency contract and assistance programs through resolution of grant appeals, bid protests, and debarment and suspension actions.

1989 Program

In 1989, the Agency is allocating a total of \$3,981,400 supported by 82.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The ORCs handle defensive litigation involving principally Regional issues. They provide advice and counsel to Regional programs; review Regional rulemaking actions; and assist States by reviewing State program delegations and advising State agencies on obtaining adequate legal authorities. Additionally, the ORCs continue to support Agency

assistance and procurement programs through resolution of grant appeals, bid protests, and debarment and suspension actions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,029,900 supported by 83.4 total workyears for this program, all of which was from the Salaries and Expenses appropriation. In 1988, the ORCs supported Agency priorities by providing legal advice and support to Regional managers and defending the Agency in litigation. They also advised on actions such as grants, contracts, and personnel actions. Additionally, the ORCs activities including advising State agencies on the legal requirements for assuming environmental protection programs, assisting in drafting appropriate regulatory language, and helping to negotiate and document the terms of delegation agreements.

PLANNING, EVALUATION, AND ANALYSIS - REGIONS

1990 Program Request

The Agency requests a total of \$4,091,500 supported by 90.9 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$377,800 and no change in total workyears from 1989. The increase Salaries and Expenses reflects increased personnel and support costs.

The ten Regions will carry out essential Regional planning, evaluation and analysis activities including planning and accountability; environmental management and reporting; regulatory review and analysis; program evaluation; management systems analysis; and risk assessment, management and communication which focuses on developing and implementing comprehensive Regional risk reduction strategies to establish the necessary institutional framework for addressing risk in the field. Region 7 also will conduct State/EPA data management activities. In addition, these resources will provide four to five Regions with the staff needed to perform activities related to cross-media pollution prevention. Products will include implementation of Regional pollution prevention plans; integration of pollution prevention and source reduction approaches in site-specific decisionmaking; sponsoring training and education events for State and local governments, industry and citizen groups; and supporting multi-State, Regional councils, established specifically to deal with pollution prevention and source reduction initiatives.

1989 Program

In 1989, the Agency is allocating a total of \$3,713,700 supported by 90.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

These resources are providing the ten Regional Administrators with the staff needed to perform essential planning, evaluation, and analysis activities. In addition, each Region continues to develop an overall strategy for improving the use of risk analysis in its decisionmaking by continuing to work with the Office of Policy, Planning and Evaluation (OPPE) in building priority-setting and planning processes and in improving the ability to set priorities based on risk reduction; increasing the scientific and technical risk capability in each Region; initiating programs to facilitate information exchange among State environmental agencies on new technical and management applications; developing new methods to explain environmental risks to the

public; and identifying specific training needs and sponsoring classes for employees in risk-related techniques. Region 7 also is using resources for State/EPA data management activities. Additionally, three or four Regions are establishing Regional pollution prevention demonstration programs. These cross-media programs support work at the state level by providing technical assistance, training opportunities and support to Regional, multi-State advisory councils. Several Regions are sponsoring projects which are targeting pollution prevention opportunities for key industrial facilities in sensitive environmental areas, and another of the demonstration Regions is integrating pollution prevention approaches into their enforcement priority-setting efforts. Evaluations of these efforts will be available early in 1990.

1988 Accomplishments

In 1988, the Agency obligated a total of \$2,853,600 supported by 67.9 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

Necessary planning, evaluation and analysis functions included the development of two pilot projects for managing for environmental results; assessment of the Mining Wastes and Denver Air Toxics Action Plans; identification of overlapping areas of statutory regulations which effect inter-media program efforts and coordination; evaluation of enforcement agreement implementation; and examination of State environmental agencies' funding and staffing. Three Regions participated in OPPE's Regional integrated environmental management projects. All Regions devoted additional resources to beginning the development of comprehensive Regional risk reduction strategies to establish the necessary institutional framework for addressing risk assessment, management, and communication. First steps involved examining the Regions' priority-setting process, developing a more objective means of setting priorities (including use of Geographic Information System technologies) and establishing a process for increased Regional participation in developing Agency priorities and assessing Regional risk reduction efforts.

Support Cost

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>MANAGEMENT AND SUPPORT</u>	11-1
SUPPORT COSTS	
Support Costs	11-72
Professional Training.	11-73
Nationwide Support Services.	11-74
Headquarters Support Services.	11-74
Regional Support Services.	11-75
Automated Data Processing Support Costs.	11-76
Lab Support - Research and Development	11-77
Lab Support - Air and Radiation.	11-77
Lab Support - Pesticides and Toxic Substances.	11-78

SUPPORT COSTS
Support Costs

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Professional Training Salaries & Expenses	\$487.2	\$520.4	\$515.9	\$600.0	\$84.1
TOTAL	\$487.2	\$520.4	\$515.9	\$600.0	\$84.1
Nationwide Support Services					
Salaries & Expenses	\$69,462.4	\$76,236.5	\$76,468.3	\$82,328.0	\$5,859.7
TOTAL	\$69,462.4	\$76,236.5	\$76,468.3	\$82,328.0	\$5,859.7
Headquarters Support Services					
Salaries & Expenses	\$34,809.9	\$40,773.1	\$39,491.3	\$48,923.7	\$9,432.4
TOTAL	\$34,809.9	\$40,773.1	\$39,491.3	\$48,923.7	\$9,432.4
Regional Support Services					
Salaries & Expenses	\$28,129.9	\$32,028.9	\$31,632.6	\$37,282.6	\$5,650.0
TOTAL	\$28,129.9	\$32,028.9	\$31,632.6	\$37,282.6	\$5,650.0
Automated Data Processing Support Costs					
Salaries & Expenses	\$33,880.8	\$33,625.0	\$34,575.0	\$46,220.5	\$11,645.5
TOTAL	\$33,880.8	\$33,625.0	\$34,575.0	\$46,220.5	\$11,645.5
Lab Support-Research & Development					
Salaries & Expenses	\$6,281.6	\$7,798.4	\$7,450.3	\$8,188.3	\$738.0
TOTAL	\$6,281.6	\$7,798.4	\$7,450.3	\$8,188.3	\$738.0
Lab Support - Air And Radiation					
Salaries & Expenses	\$1,747.4	\$1,853.2	\$1,853.2	\$1,953.2	\$100.0
TOTAL	\$1,747.4	\$1,853.2	\$1,853.2	\$1,953.2	\$100.0
Lab Support - Pesticides & Toxic Substances					
Salaries & Expenses	\$204.6	\$451.4	\$451.4	\$474.0	\$22.6
TOTAL	\$204.6	\$451.4	\$451.4	\$474.0	\$22.6
Salaries & Expenses	\$175,003.8	\$193,286.9	\$192,438.0	\$225,970.3	\$33,532.3
Support Costs	\$175,428.5	\$193,286.9	\$192,438.0	\$225,970.3	\$33,532.3



MANAGEMENT AND SUPPORT

Support Costs

Budget Request

The Agency requests a total of \$225,970,300 for 1990, an increase of \$33,532,300 from 1989. All of the request is for the Salaries and Expenses appropriation.

PROFESSIONAL TRAINING

1990 Program Request

The Agency requests a total of \$600,000 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$84,100 from 1989. The increase will enhance current training and development programs as well as support human resources management initiatives especially in the areas of expanding technology transfer to state, local and tribal governments. The Agency will continue to offer training and development to managers and support staff. Scientific and technical courses will be developed. The EPA Institute will add to its current offerings. Career development activities will be enhanced in order to help employees develop and maintain needed skills.

1989 Program

In 1989, the Agency is allocating a total of \$515,900 for this program, all of which is from the Salaries and Expenses appropriation. These funds are being used to develop and deliver a widening variety of training opportunities through the EPA Institute and will increase the number of employees trained to conduct these courses. Institute courses Agencywide will be consolidated into an automated course catalogue. The Agency will emphasize Regional Institute activities, especially those involving transfer of technology to states and tribal communities. EPA will continue to conduct supervisory and managerial training courses including "Framework for Supervision", "Keys to Managerial Excellence", and "Managing for Results" and will introduce "A Core Course for Executives". In addition, it will develop programs to augment these core managerial courses. Career development programs will be supported which increase the cross-agency and cross-media experience of employees and managers, and improve their ability to address complex environmental problems. Current activities of the Senior Executive Service (SES) Candidate Development Program, the Presidential Management Intern Program and the Greater Leadership Opportunities Program will be maintained. The Agency will continue to support the career advisory committees and the Human Resources Council.

1988 Accomplishments

In 1988, the Agency obligated a total of \$487,200 for this program, all of which was from the Salaries and Expenses appropriation. These funds were utilized to provide training in the areas of supervisory management, executive development, clerical skills, and technical and scientific development. EPA Institute operations were expanded to regions and field locations. The Agency developed a pre-supervisory training program as well as the Greater Leadership Opportunities Program (GLO), a program targeted at helping women and minorities to advance.

NATIONWIDE SUPPORT SERVICES

1990 Program Request

The Agency requests a total of \$82,328,000 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$5,859,700 from 1989. The increase will cover additional space rental and FTS rate increases as well as cost escalations to service contracts. These funds will pay for Agencywide support costs including space rental, Ann Arbor laboratory lease-purchase agreement, postage, FTS and telecommunications costs, national security, Code of Federal Regulations typesetting, unemployment compensation, workmen's compensation, health and safety studies, and personnel support for Public Health Service commissioned officers. The request also reflects the transfer of \$1,675,000 for basic Nationwide Support services to the Inspector General Appropriation to implement the new Inspector General Act Amendments of 1988.

1989 Program

In 1989, the Agency is allocating a total of \$76,468,300 for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used by the Agency to provide efficient nationwide services to the Agency workforce.

1988 Accomplishments

In 1988, the Agency obligated a total of \$69,462,400 for this program, all of which was from the Salaries and Expenses appropriation. These resources allowed the Agency to pursue several nationwide support efforts in the areas of space planning, telecommunications, information security, and personal property management.

HEADQUARTERS SUPPORT SERVICES

1990 Program Request

The Agency requests a total of \$48,923,700 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$9,432,400 from 1989. The increase will provide for cost increases for utilities and cost escalations to service contracts, as well as cover anticipated utility rate increases. It will also support information management

services and provide ADP technical support for the State/EPA Data Management Program, the Integrated Financial Management System, administrative systems, systems modernization and records management. These resources will provide space planning and coordination services for the new Headquarters facility. These resources will also provide ongoing Headquarters Support services including motor pool, printing and copying, telephones, utilities, facilities operations and maintenance, and ADP technical support to EPA operations in Washington, Research Triangle Park (RTP), North Carolina, and Cincinnati, Ohio. This request also reflects the transfer of \$609,200 for basic Headquarters Support services to the Inspector General Appropriation to implement the IG Act Amendments of 1988.

1989 Program

In 1989, the Agency is allocating a total of \$39,491,300 for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide ongoing office, building, and information management services to EPA operations in Washington, RTP, and Cincinnati. With this funding level the Agency will provide critical ongoing services necessary to operate and manage EPA facilities, office supply/support services, and management information systems. Additionally, the Agency will continue to carry-out its operating plans for delegation of authority for lease enforcement/building operations at headquarters facilities, and will continue to refine procedures for property management/inventory control. We will continue to plan for the new Headquarters facility and focus on refinement of design characteristics.

1988 Accomplishments

In 1988, the Agency obligated a total of \$34,809,900 for this program, all of which was from the Salaries and Expenses appropriation. These resources provided basic Headquarters Support services to EPA operations in Washington, RTP, and Cincinnati. In addition, detailed technical requirements, evaluation criteria, and site analysis information was performed in preparation for the new Headquarters facility. ADP support was provided for the first modules of the Integrated Financial Management System.

REGIONAL SUPPORT SERVICES

1990 Program Request

The Agency requests a total of \$37,282,600 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$5,650,000 from 1989. The increase will allow for contract and rate increases in basic operating costs, provide for the purchase of ESD lab equipment, support Regional moves and the Regional Institutes and provide support for Financial Management activities. This level of resources will provide the ten Regional offices with basic support services including printing and copying, minicomputer operations, utilities, mail, telephone, library operations, general training, office and laboratory facility maintenance, and technical support.

1989 Program

In 1989, the Agency is allocating a total of \$31,632,600 for this program, all of which is from the Salaries and Expenses appropriation. These resources are being used to provide basic office, building, and information management services to the Regions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$28,129,900 for this program, all of which was from the Salaries and Expenses appropriation. These funds provided ongoing support services in the Regions, including improved property management and better safety and security for EPA employees. Also, the Regions continued efforts to increase Regional productivity.

AUTOMATED DATA PROCESSING SUPPORT COSTS

1990 Program Request

The Agency requests a total of \$46,220,500 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$11,645,500 from 1989. This increase will enable the Agency to allow for increased timeshare capacity to meet additional program and administrative ADP needs. These resources will provide the mainframe computing capacity, telecommunications network and operations to support the access and use of environmental and management data. This request also reflects the transfer of \$130,000 for basic ADP support services to the Inspector General Appropriation to implement the Inspector General Act Amendments of 1988.

1989 Program

The Agency is allocating a total of \$34,575,000, all of which is from the Salaries and Expenses appropriation. These funds are being used to maintain current computing services in support of all Agency programs, exclusive of Superfund. The Agency is also completing the replacement of obsolete Regional computing with modern technology and is beginning to implement a more open telecommunications architecture centered around current communications standards.

1988 Accomplishments

In 1988, the Agency obligated a total of \$33,880,800, all of which was from the Salaries and Expenses appropriation. The Agency used these funds to maintain and operate its mainframe computing systems, continue the replacement of obsolete minicomputers in the Agency's Regional Offices with modern processors that are compatible with the Agency's mainframe and telecommunications architecture, implemented the Agency's short-term telecommunications strategy which increased bandwidth and improved concentration of data transmission, began the implementation of its long-term intelligent workstation program by awarding a master contract for a range of

compatible personal computers (PC's) and related support services, and continued to support modernization of the Agency's laboratory computing resources.

LAB SUPPORT - RESEARCH AND DEVELOPMENT

1990 Program Request

The Agency requests a total of \$8,188,300 all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$738,000 from 1989 to provide for the operating costs for a biotechnology building in Gulf Breeze, Florida and the Hatfield Marine Science Center in Newport, Oregon. Funds provide for essential services required to operate and maintain ORD's seven remote laboratories located in:

- o Athens, Georgia
- o Ada, Oklahoma
- o Corvallis, Oregon
- o Duluth, Minnesota
- o Narragansett, Rhode Island
- o Gulf Breeze, Florida
- o Las Vegas, Nevada

Services include, but are not limited to, facilities operation and maintenance; janitorial and guard services; local telephone services; utilities; and equipment operations, maintenance and rental costs.

1989 Program

In 1989, the Agency is allocating a total of \$7,450,300, all of which is from the Salaries and Expenses appropriation. This program provides funds for the operation and maintenance of ORD's seven remote laboratories.

1988 Accomplishments

The Agency obligated \$6,281,600, all of which was from the Salaries and Expenses appropriation. These funds provided for the operation and maintenance of remote laboratories.

LAB SUPPORT - AIR AND RADIATION

1990 Program Request

The Agency requests a total of \$1,953,200 for this program, all of which is for the Salaries and Expenses appropriation. This represents an increase of \$100,000 from 1989. The increase reflects increased support costs at air and radiation laboratories. This program supports the Motor Vehicle Emissions Laboratory (MVEL) in Ann Arbor, Michigan; the Eastern Environmental Radiation Facility (EERF) in Montgomery, Alabama; and the Las Vegas radiation facility (LVF) in Nevada. These funds provide basic operation and maintenance support

at these locations. The support provided includes security, janitorial, and maintenance services; utilities; General Services Administration vehicles; supplies and materials; and communications.

1989 Program

In 1989 the Agency is allocating \$1,853,200 to support the three laboratories, all from the Salaries and Expenses appropriation. The 1989 program is providing the same types of activities described for 1990: basic laboratory operations, maintenance, and supplies. These activities are required on a continuing basis for effective and safe laboratory operation.

1988 Accomplishments

In 1988 the Agency obligated a total of \$1,747,400 for this program, all of which is from the Salaries and Expenses appropriation. These funds provided the basic facilities operations and maintenance costs necessary to operate the three laboratories.

LAB SUPPORT - PESTICIDES AND TOXIC SUBSTANCES

1990 Program Request

The Agency requests a total of \$474,000 for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of \$22,600, reflecting increased equipment maintenance costs. These funds will be used for basic facilities and operation and maintenance costs for the laboratories in Beltsville, Maryland and Bay St. Louis, Mississippi. These costs include utilities, security, communications, warehousing, custodial services, and building maintenance. These resources will also provide for the purchase of new laboratory equipment to replace equipment which is obsolete or no longer cost-effective to repair, and cover increasing maintenance costs for existing equipment. The increase will also provide for the purchase of equipment for building analytical capacity for biotechnology and other unique products which cannot be validated with traditional laboratory instruments.

1989 Program

In 1989, the Agency is allocating a total of \$451,400 for this program, all of which is from the Salaries and Expenses appropriation. The 1989 program supports the facilities, operations, and maintenance costs for the laboratories in Beltsville, Maryland and Bay St. Louis, Mississippi. These costs include utilities, security, communications, warehousing, custodian services, building maintenance, purchase of new laboratory equipment to replace equipment which is obsolete or no longer cost-effective to repair, equipment maintenance, building biotechnology capacity, and analyzing unique products which cannot be validated with traditional analytical laboratory instruments.

1988 Accomplishments

In 1988, the Agency obligated a total of \$204,600 for this program, all of which was from the Salaries and Expenses appropriation. The funds were used to provide general support and maintenance of the laboratories.

12. Buildings & Facilities

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>BUILDINGS AND FACILITIES</u>	12-1
Buildings and Facilities.	12-3
New Facilities	12-4
Repairs and Improvements	12-4



BUILDINGS AND FACILITIES

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

	(DOLLARS IN THOUSANDS)				
APPROPRIATION	\$18,247.1	\$8,000.0	\$16,514.8	\$8,000.0	-\$8,514.8
OUTLAYS	\$9,247.0	\$12,929.0	\$12,929.0	\$18,623.0	\$5,694.0
AUTHORIZAITON LEVELS	Authorization is by virtue of the Appropriation Act.				

BUILDINGS AND FACILITIES

OVERVIEW AND STRATEGY

The Buildings and Facilities appropriation funds the design, construction, repair and improvement of buildings occupied by EPA. The Agency currently has ten Regional offices with associated Regional laboratories, two large research and development laboratories, a number of field stations with laboratory facilities and a large headquarters complex.

This program provides a safe and healthful work environment for EPA employees by providing for renovation upgrades, repair or replacement of our facilities. Major efforts are directed towards implementing intermediate and long-range plans which assess alternative housing options for EPA operations, as well as continuing a repair program that protects the investment in EPA's real property holdings. Resources are also used to upgrade and modify current facilities to more adequately and efficiently address Agency programs. Particular emphasis will be placed on environmental compliance efforts in EPA facilities where modifications are needed to accommodate storage of hazardous materials, removal of asbestos and PCB's, upgrading fire and life safety systems, such as installation of sprinkler and detection systems as well as the removal of Halon systems, and renovating HVAC systems to meet ventilation standards.

BUILDINGS AND FACILITIES

Buildings and Facilities

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
PROGRAM					

New Facilities					
Buildings & Facilities	\$11,752.2	\$1,900.0	\$10,100.7	\$500.0	-\$9,600.7
TOTAL	\$11,752.2	\$1,900.0	\$10,100.7	\$500.0	-\$9,600.7
Repairs & Improvements					
Buildings & Facilities	\$6,494.9	\$6,100.0	\$6,414.1	\$7,500.0	\$1,085.9
TOTAL	\$6,494.9	\$6,100.0	\$6,414.1	\$7,500.0	\$1,085.9
TOTAL:					
Buildings & Facilities	\$18,247.1	\$8,000.0	\$16,514.8	\$8,000.0	-\$8,514.8



Buildings and Facilities

Budget Request

The Agency requests \$8,000,000 for the Buildings and Facilities appropriation, a decrease of \$8,514,800 from 1989.

NEW FACILITIES

1990 Program Request

The Agency requests a total of \$500,000 for this program, all of which will be for the Building and Facilities appropriation. This represents a decrease of \$9,600,700 from 1989. This request will provide funds to construct daycare facilities.

1989 Program

In 1989, the Agency is allocating \$10,100,700 for this program, all of which is from the Buildings and Facilities appropriation. These funds are being used to construct a new water quality monitoring field station in Newport, Oregon; design and renovate a Superfund Lab in Edison, New Jersey; and substantially complete the design for a Clinical Inhalation Research Laboratory at Chapel Hill, North Carolina. These funds will design and construct a biotechnology lab in Gulf Breeze, Florida; design and renovate a lab to test and evaluate innovative hazardous waste treatment technologies in Edison, New Jersey; continue to construct a radiation lab in Montgomery, Alabama; and support construction management activities at the Newport, Oregon laboratory.

1988 Accomplishments

In 1988, the Agency obligated a total of \$11,752,200 for this program, all of which was carryover from the Buildings and Facilities appropriation. These funds were used to start construction on a new water quality monitoring field station in Newport, Oregon, and to design a lab for clinical inhalation research in Chapel Hill, North Carolina. In addition, work continued on the Montgomery radiation lab, and construction was completed on the hazardous waste containment laboratory in Cincinnati, Ohio.

REPAIRS AND IMPROVEMENTS

1990 Program Request

The Agency requests a total of \$7,500,000 for this program, all of which will be for the Buildings and Facilities appropriation. This represents an increase of \$1,085,900 from 1989. The increase will be used for health and safety and environmental compliance projects. These funds will provide planning, engineering design, and construction related to the repair and improvement of buildings occupied by EPA. More specifically, these funds will be used to address critical repairs related to employee health and safety (fire protection installation); environmental compliance efforts in EPA facilities (asbestos removal and hazardous materials storage); and required alterations and repairs (electrical distribution, air conditioning, emergency power for animal facilities).

1989 Program

In 1989, the Agency is allocating a total of \$6,414,100 for this program, all of which is from the Buildings and Facilities appropriation. These resources are being utilized primarily to provide facilities maintenance and repair in an effort to prevent further deterioration of EPA facilities; to initiate environmental compliance activities such as asbestos and PCB removal; and to continue health and safety improvements and modifications to facilities reflecting shifts in program priorities and upgraded space requirements.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,494,900, all of which was from the Buildings and Facilities appropriation. These resources were used to complete various health and safety and environmental compliance improvements to protect EPA employees and provide routine and emergency repairs at multiple sites throughout the nation.

13. Construction Grants

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>CONSTRUCTION GRANTS</u>	13-1
Construction Grants	13-3



CONSTRUCTION GRANTS

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION	\$2,793,098.0	1950,000.0	1950,000.0	1200,000.0	-\$750,000.0
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OUTLAYS	\$2,514,461.0	2390,000.0	2390,000.0	2350,000.0	-\$40,000.0
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AUTHORIZATION LEVELS	The Water Quality Act of 1987 reauthorized this program at a level of \$2,400,000,000 for each year 1987 through 1991.				
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CONSTRUCTION GRANTS

OVERVIEW AND STRATEGY

Program Background

Since 1973 the construction grants program has completed about 7,000 construction projects and provided over \$50 billion of the more than \$73 billion invested in grant-assisted wastewater treatment works. There are currently about 15,600 treatment plants in the nation serving over 176 million people.

This program has been authorized since 1972 through Title II of the Clean Water Act (CWA). Legislative amendments in 1977 and 1981 made a number of significant changes to the program which increased state responsibilities for direct grants management and reduced the Federal role in financing project grants. The statute provides a formula for annual allotment of funds to states and contains authorities for various funding set-asides to support delegated state management, water quality management planning, innovative and alternative technologies, and rural communities.

Program Transition

The Water Quality Act (WQA) of 1987 set the stage for significant program changes. The traditional program of grants to communities for constructing facilities is being replaced by grants to states to capitalize revolving loan funds (SRFs), ushering in expanded state responsibilities and autonomy in an already extensively delegated program. Although several Title II requirements will apply to projects funded with capitalization grants for the initial round of assistance under the SRF program, the new Title VI of the CWA gives states substantial flexibility to meet their municipal pollution control needs. Under the SRF program, states will have greater flexibility to use funds for nonpoint source and estuary programs after they have addressed National Municipal Policy projects. Eight states received SRF grants in 1988; 40 SRF grants are projected for 1989, and a total of 51 SRF grants are expected in 1990.

Another key change brought by the WQA was the creation of several set-asides from construction grants (Title II funds). These include National reserves for Indian tribe wastewater treatment grants, Marine Combined Sewer Overflow grants, and funding for the National Estuary Program. A state set-aside allows each state to use one percent or \$100,000, whichever is greater, for nonpoint source programs. The set-asides have provided significant financial support to these activities since the WQA was enacted; however, they will end with the final appropriation of Title II funds in 1990.

Although construction grants funding will end after 1990, grants management activities will continue at significant levels through the 1990's. In 1989, almost 6,000 grants will remain active. EPA will help assure that grant-assisted projects utilize appropriate and affordable designs, are constructed in the most cost-effective manner, and are managed and operated to comply with program and discharge requirements. Effective management of the national construction grants program will be stressed, emphasizing development and implementation of multi-year Regional and state strategies to construct, complete, and close out construction grants. EPA will request delegated states seeking SRF capitalization grants to provide strategies for constructing and completing grant projects, including resource plans covering the remaining period through construction, audit and grant closeout.

CONSTRUCTION GRANTS

Construction Grants

Budget Request

The Agency requests a total of \$1,200,000,000 for the construction grants appropriation, under Titles II and VI of the Clean Water Act (CWA). This request is divided between construction grants (\$400,000,000) and State Revolving Funds (SRF) (\$800,000,000), and represents a decrease of \$750,000,000 from 1989.

CONSTRUCTION GRANTS

1990 Program Request

The Agency requests a total of \$1,200,000,000 for the construction grants appropriation, a decrease of \$750,000,000 from 1989. This request is consistent with the Administration's \$12 billion phaseout of the program, which was designed to provide the Federal resources needed to construct the highest priority projects and bring noncomplying publicly owned treatment works back into compliance with the secondary treatment requirements of Title II.

Gross obligations for the construction grants program will total approximately \$221,000,000; gross obligations for the SRF program will total approximately \$1,222,000,000. Net outlays are projected to be \$1,676,000,000 for construction grants and \$674,000,000 for the SRF program.

The requested funding level will provide for a total of 63 construction grant awards, resulting in a total active workload of approximately 5,500 construction grant projects at the end of 1990. There will also be an estimated 51 operational SRF programs during 1990. Section 205(g) and (j) set-aside obligations are expected to continue at authorized levels. In addition, construction grant set-asides (Title II funds only) under Section 205 will provide grants for Indian tribes, marine combined sewer overflows, and estuaries.

1989 Program

In 1989, the Agency is allocating a total of \$1,950,000,000 from the construction grants appropriation.

Gross obligations for the construction grants program will total approximately \$1,166,000,000 and approximately \$1,361,000,000 for the SRF program. Net outlays will be approximately \$2,262,000,000 for construction grants and \$128,000,000 for the SRF program. The 1989 funding level will result in a total of 282 Title II grant awards and a total active workload of almost 6,000 construction grants projects at the end of 1989. The Agency also expects to have 40 operational SRF programs in 1989. Section 205 set-aside obligations are expected to continue at authorized levels.

The 1989 construction grants appropriation included \$68,000,000 which Congress earmarked for Boston Harbor (\$25,000,000), Des Moines (\$20,000,000), Tijuana (\$20,000,000), and Oakwood Beach/Red Hook (\$3,000,000). Authorizations

for these activities are contained in Sections 513, 515, 510, and 512, respectively, of the Water Quality Act of 1987. The Agency is working with the affected jurisdictions to develop plans for the use of these funds consistent with their authorized purposes.

1988 Accomplishments

In 1988, gross obligations totaled \$2,685,098,000 for construction grants and \$108,000,000 for the SRF program. This funding supported 634 Title II grant awards and resulted in a total active workload of 6,244 grant projects at the end of 1988. Federal outlays totaled \$2,514,461,000 for construction grants and \$371,000 for the SRF program. States obligated \$82,704,000 under 205 (g) and \$24,100,000 under 205 (j) for water quality and nonpoint source planning.

14. Superfund

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	14-1
RESEARCH AND DEVELOPMENT	
Hazardous Substance Research.	14-8
Scientific Assessment.	14-16
Monitoring Systems and Quality Assurance	14-17
Health Effects	14-19
Environmental Engineering and Technology	14-20
Environmental Processes and Effects.	14-22
Exploratory Research	14-23
Technical Information and Liaison.	14-24
HAZARDOUS SUBSTANCE RESPONSE	
Hazardous Substance Response.	14-25
Hazardous Spill and Site Response.	14-26
Hazardous Substance Response - Support.	14-34
Hazardous Substance Response - Office of Water	14-35
Hazardous Substance Response - Office of Air and Radiation	14-37
Hazardous Substance Response - Interagency.	14-38
Department of Health and Human Services.	14-40
United States Coast Guard.	14-42
Department of Justice.	14-43
Federal Emergency Management Agency.	14-43
National Oceanic and Atmospheric Administration.	14-44
Department of the Interior	14-45
Occupational Safety and Health Administration.	14-46
ENFORCEMENT	
Hazardous Substance Response - Enforcement.	14-47
Hazardous Substance Technical Support - Office of Enforcementnt and Compliance Monitoring.	14-49
Hazardous Substance Technical Enforcement.	14-51
Hazardous Substance Legal Enforcement.	14-53
Hazardous Substance Criminal Investigations.	14-56
MANAGEMENT AND SUPPORT	
Hazardous Substance Management and Support.	14-58
Hazardous Substance Financial Management - Headquarters.	14-64
Hazardous Substance Financial Management - Regions	14-65
Hazardous Substance Administrative Management - Headquarters	14-65
Hazardous Substance Administrative Management - Regions.	14-66
Hazardous Substance Contracts and Grants Management - Headquarters.	14-67
Hazardous Substance Contracts and Grants Management - Regions	14-68
Hazardous Substance Support Services - Headquarters.	14-68
Hazardous Substance Support Services - Regions	14-69
Hazardous Substance Computer Services.	14-69
Hazardous Substance Legal Services - Headquarters.	14-70

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
Hazardous Substance Legal Services - Regions	14-70
Hazardous Substance - Office of the Inspector General.	14-71
Hazardous Substance - Office of Policy, Planning and Evaluation.	14-72
Hazardous Substance - Office of the Comptroller.	14-74
Hazardous Substance - Office of External Affairs	14-74
Hazardous Substance - Executive Offices.	14-75
Hazardous Substance - Office of Research and Development - Lab Support.	14-76

SUPERFUND

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Hazardous Substance Superfund	\$1497,370.3	1425,000.0	1579,093.2	1739,683.0	\$160,589.8
Office of the Inspector General				\$10,317.0	\$10,317.0
 TOTAL, Superfund	 \$1497,370.3	 1425,000.0	 1579,093.2	 1750,000.0	 \$170,906.8
 PERMANENT WORKYEARS	 2,451.9	 2,706.7	 2,701.7	 2,535.0	 -166.7
TOTAL WORKYEARS	2,642.2	2,830.0	2,824.7	3,035.0	210.3
OUTLAYS	\$828,912.0	1150,000.0	1150,000.0	1375,000.0	\$225,000.0
AUTHORIZATION LEVELS	The Superfund Amendments and Reauthorization Act (SARA) of 1986 authorizes a total of \$8,500,000,000 for this program for 1987 through 1991.				

NOTE: 1988 Actual includes \$250.3 discussed in Hazardous Waste, Community Right To Know;
and \$105.0 discussed in Toxic Substances, OPTS Title III.



SUPERFUND

OVERVIEW AND STRATEGY

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, charges the Agency with the responsibility for providing emergency response for hazardous substances released into the environment and the remediation of inactive hazardous waste disposal sites. The Agency endeavors to mitigate or eliminate one or more of the following situations: 1) contamination of drinking water supplies, ground water, and soil; 2) pollution of surface streams and lakes; 3) danger of fire or explosion; 4) spreading of toxic fumes; and 5) direct contact by humans and wildlife with hazardous materials. The Hazardous Substance Superfund finances the required activities to implement CERCLA through excise taxes levied on oil and chemical manufacturers, a corporate environmental tax, cost recoveries, fines and penalties, and general revenues.

The Agency will respond to releases of hazardous substances, pollutants, and contaminants by either a removal or remedial action or by compelling potentially responsible parties (PRPs) to undertake the response action. Removal actions are generally short-term responses taken to abate an immediate threat posed by the uncontrolled release of hazardous substances at sites or spills into the air, land, or water. Remedial actions involve long-term and more permanent remedies taken instead of, or in addition to, removal actions. The program will continue to select sites for remedial action from the National Priorities List (NPL) and to undertake all response actions in accordance with the National Contingency Plan (NCP).

While the Agency has the primary responsibility for implementing the program, CERCLA, Executive Order 12580, and SARA, provide a mandate for the Agency to work closely with a variety of other Federal agencies and the states to carry out the Act. The Agency undertakes five major activities in implementing the Superfund program: Hazardous Substance Response, Enforcement, Interagency Support, Research and Development, and Management and Support. The effective integration of these activities involves close cooperation among various Agency offices, the states, and other Federal agencies with specific program responsibilities.

Response Actions Address Environmental Threats

The response program addresses two major goals: 1) to stabilize actual or potential threats from releases of hazardous substances; and 2) to ensure that environmental threats posed by uncontrolled hazardous waste sites are addressed quickly and effectively.

The emphasis in 1990 will be to continue a shift to greater involvement of PRPs in the remedial process. This program growth will occur as the Agency continues to balance environmental concerns and program priorities. Work directed to pre-remedial activities will continue at a constant level as the emphasis of the program shifts to the completion of feasibility studies and remedial designs. Progress in moving sites to the final response stages will

be stressed as the Agency strives to meet the SARA schedules for remedial action starts. Increased resources are being directed to fund remedial actions that will be ready for construction to begin in 1990. The Agency will continue to place an emphasis on the requirement of preference for treatment technologies and permanent remedies.

The Agency will focus its removal actions on "classical emergencies" or time-critical responses where there is no PRP, state, or local response alternative. A lack of action on the Agency's part in these situations could result in substantial harm to the public health and/or the environment. Continued emphasis will be placed on greater PRP, state and local participation in all areas of emergency response.

Activities complementary to direct response actions will be supported. The Agency's Environmental Response Team will continue to provide training and technical support to Agency, state, and local government personnel. The Agency will continue to operate a system for collecting comprehensive national notification and response data on accidental releases of hazardous substances. Emphasis will continue on the transfer of research outcomes and other technical information among decision makers, with emphasis on the transfer of information concerning alternative technologies to land disposal.

To ensure that Superfund response activities do not result in radiation hazards or diminished air and water quality, the Office of Air and Radiation and the Office of Water will continue to provide laboratory analyses, technical assistance and guidance for these efforts.

Enforcement Actions Continue to Emphasize Privately-Funded Response Activities

The enforcement component of the Superfund program continues to emphasize privately-funded response actions. PRPs will be prompted to act through negotiated administrative settlements for pre-remedial actions and through settlements embodied in a Consent Decree for remedial design and construction. Negotiations will be based on assessments of site conditions and alternative solutions identified by the Agency.

Where negotiations are unsuccessful, either a Fund-financed action with subsequent cost recovery will occur, or a CERCLA Section 106 judicial action will be undertaken to compel a privately-financed response. Settlements and judgements will be monitored for compliance and, where necessary, punitive action taken.

The Agency will enter into agreements with the states to encourage their active involvement in the Superfund program. Through these agreements, the Agency will provide technical assistance as the states compel PRP response under state authorities and oversee privately-funded response actions.

The enforcement program will also provide technical assistance to other Federal agencies that are addressing uncontrolled hazardous conditions at facilities owned or operated by that agency. EPA will concur or select the site remedy and will negotiate an agreement with the agencies to implement the remedy.

The Criminal Enforcement program will use the felony provisions of SARA to prosecute parties who illegally dispose of waste, fail to report hazardous substance releases, destroy records, or submit false information on claims.

The Agency will provide specialized support for the Enforcement program through laboratory analysis of high hazard samples, field investigation, technical assistance in the negotiations of consent decrees, and evidence audits to assure the accuracy of records and analyses.

Research and Development to Support Response Actions

The Research and Development program will provide support to the Agency, states, and industry in resolving technical problems which inhibit the effective implementation of removal and remedial actions at Superfund sites. Support focuses on adapting existing technologies and scientific information for application to uncontrolled hazardous waste sites.

In addition to providing expanded technical support, the program will emphasize the commercialization of alternative and innovative treatment technologies for use in remedial and removal actions by developing reliable performance and cost information through full scale demonstrations under the Superfund Innovative Technology Evaluation (SITE) program.

Additional resources will be devoted to evaluating naturally occurring or improved microorganisms (biosystems) for their ability to degrade hazardous substances. Increased resources will also be provided to develop advanced field monitoring techniques for the measurement of hazardous substances commonly found at Superfund sites. Technologies which are now primarily used in the laboratory will be adapted and further developed for field use to provide techniques and methods that provide more cost-effective field monitoring at Superfund sites.

EPA Will Continue to Rely Upon the Specialized Expertise of Other Federal Agencies

As part of the requirement for close cooperation among various Federal agencies, the Agency integrates the efforts of the Departments of Health and Human Services, Justice, Transportation, Commerce, Interior, Labor, and the Federal Emergency Management Agency (FEMA) and manages an interagency budget process under Executive Order 12580, signed by the President in January, 1987. The activities of other Federal agencies are divided into two basic categories. The first category includes those activities which are episodic in nature and taken in direct support of specific site or spill response actions. The second category of other Federal agency involvement is support for on-going activities which are generally not incident-specific. These activities include developing program policies and guidance, conducting health research, training response personnel, litigating civil and criminal cases, and providing scientific and technical advice to EPA on-scene coordinators.

The Department of Health and Human Services provides the largest supporting element to Superfund activities through the work of the Agency for Toxic Substances and Disease Registry (ATSDR) and the National Institute for Environmental Health Sciences (NIEHS). ATSDR will: 1) provide health assessments at NPL and non-NPL sites; 2) enhance and maintain toxicology data bases for chemicals found at Hazardous Waste sites; and 3) provide health consultations for emergency responses. NIEHS will continue its basic research grant program of conducting biomedical studies investigating new and unique methodologies to measure levels of exposure and its effects on humans. Other Federal agencies will provide additional support for EPA. Department of Justice will conduct litigation and provide legal advice to achieve PRP actions or cost recovery at abandoned hazardous waste sites. FEMA will support permanent and temporary relocation operations. The U.S. Coast Guard will

respond to spills of hazardous substances in coastal and Great Lakes waters and maintain the National Response Center. The other agencies provide specialized expertise to the Superfund program and support the activities of the National Response and Regional Response Teams (NRT/RRT). The agencies together enable EPA to respond more effectively and efficiently to emergencies and long-term response actions, and to carry out a vigorous enforcement effort.

Management and Support Will Continue to Provide Effective and Efficient Services and Ensure a High Level of Trust Fund Integrity

The Agency will continue to decentralize the Superfund Contracting program by placing the balance of Regional contracting officers in the field. This will provide greater assurances that site-specific contracting needs are effectively addressed. Likewise, the Agency will place Superfund Grants management personnel in the Regions to manage and oversee Superfund Cooperative and Interagency Agreements, and Technical Assistance Grants.

In addition, the Health and Safety program, both in Headquarters and the Regions, will be improved significantly to provide the training and health monitoring needed to ensure that the health of our workers is safeguarded and that the Agency is in compliance with health and safety regulations. Financial management services will continue to assure data integrity and provide timely and accurate reports to Regional and Headquarters managers. Other administrative services will be enhanced in areas such as Superfund property management and program systems development.

The Office of Policy and Planning Evaluation will undertake a comprehensive review of the Superfund program in order to assess program planning and implementation.

Consulting Services

The response program uses consulting services to provide additional technical expertise. Specifically, consultants are called upon to develop designs for cost analysis research, models for remedial project cost estimation, and project management training courses for Remedial Project Managers and On-Scene Coordinators.

As in the response program, the enforcement program uses consulting services to provide additional technical expertise. Consultants are called upon to develop designs for cost analysis research, models for project cost estimation, and project management training courses for enforcement project managers.

SUPERFUND

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase + Decrease - 1990 vs. 1989
PROGRAM ACTIVITIES				
Incremental Outputs				
Removal Actions:				
Fund Financed.....	195	190	190	0
PRP Response.....	78	42	56	+14
Pre-remedial Activities:				
Preliminary Assessments	2,884	2,500	2,500	0
Site Inspections.....	1,237	1,325	1,325	0
Remedial Investigations/ Feasibility Studies:				
Fund Financed.....	53	43	55	+12
PRP Response.....	48	60	67*	+7
Remedial Designs:				
Fund Financed.....	39	61	75	+14
PRP Response.....	26	67	65	-2
Remedial Actions:				
Fund Financed.....	37	23	41	+18
PRP Response.....	21	44	50	+6
Judicial Enforcement:				
106 Referrals.....	26	68	83	+15
107 Referrals.....	59	66	60	-6
Criminal Referrals.....	1	1	4	+3

* Includes State-Enforcement Lead

SUPERFUND

	Actual 1988	Current Estimate 1989	Estimate 1990	Increase + Decrease 1990 vs 1989
PROGRAM ACTIVITIES				
Cumulative Outputs				
Removal Actions:				
Fund Financed.....	1,034	1,224	1,414	+190
PRP Response.....	262	304	360	+56
Pre-remedial Activities:				
Preliminary Assessments	26,888	29,388	31,888	+2,500
Site Inspections.....	9,072	10,397	11,722	+1,325
Remedial Investigations/ Feasibility Studies				
Fund Financed.....	485	528	583	+55
PRP Response.....	143	203	270	+67
Both.....	72	N/A	N/A	N/A
Remedial Designs:				
Fund Financed.....	163	224	299	+75
PRP Response.....	81	148	213	+65
Remedial Actions:				
Fund Financed.....	104	127	168	+41
PRP Response.....	83	127	177	+50
Both.....	4	N/A	N/A	N/A
Judicial Enforcement:				
106 Referrals.....	139	207	290	+83
107 Referrals.....	236	302	362	+60
Criminal Referrals.....	1	2	6	+4

Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	14-1
RESEARCH AND DEVELOPMENT	
Hazardous Substance Research.	14-8
Scientific Assessment.	14-16
Monitoring Systems and Quality Assurance	14-17
Health Effects	14-19
Environmental Engineering and Technology	14-20
Environmental Processes and Effects.	14-22
Exploratory Research	14-23
Technical Information and Liaison.	14-24

SUPERFUND
Hazardous Substances Research

PROGRAM	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					

Scientific Assessment- Superfund					
Hazardous Substance Superfund	\$4,166.7	\$4,445.2	\$4,376.3	\$4,226.3	-\$150.0
TOTAL	\$4,166.7	\$4,445.2	\$4,376.3	\$4,226.3	-\$150.0
Monitoring Systems & Quality Assurance - Superfund					
Hazardous Substance Superfund	\$12,728.3	\$13,031.4	\$12,933.2	\$13,322.5	\$389.3
TOTAL	\$12,728.3	\$13,031.4	\$12,933.2	\$13,322.5	\$389.3
Health Effects					
Hazardous Substance Superfund	\$3,696.7	\$3,745.0	\$3,745.0	\$3,825.3	\$80.3
TOTAL	\$3,696.7	\$3,745.0	\$3,745.0	\$3,825.3	\$80.3
Environmental Engineering & Technology - Superfund					
Hazardous Substance Superfund	\$26,427.7	\$32,403.7	\$32,403.7	\$32,201.6	-\$202.1
TOTAL	\$26,427.7	\$32,403.7	\$32,403.7	\$32,201.6	-\$202.1
Environmental Processes & Effects - Superfund					
Hazardous Substance Superfund	\$3,142.1	\$4,698.7	\$4,865.8	\$5,218.3	\$352.5
TOTAL	\$3,142.1	\$4,698.7	\$4,865.8	\$5,218.3	\$352.5

SUPERFUND
Hazardous Substances Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
Exploratory Research Hazardous Substance Superfund	\$3,128.5	\$9,050.0	\$14,050.0	\$8,600.0	-\$5,450.0	
TOTAL	\$3,128.5	\$9,050.0	\$14,050.0	\$8,600.0	-\$5,450.0	
Technical Information And Liaison Hazardous Substance Superfund	\$582.2	\$693.3	\$693.3	\$693.3		
TOTAL	\$582.2	\$693.3	\$693.3	\$693.3		
TOTAL: Hazardous Substance Superfund	\$53,872.2	\$68,067.3	\$73,067.3	\$68,087.3	-\$4,980.0	
Hazardous Substances Research	TOTAL	\$53,872.2	\$68,067.3	\$73,067.3	\$68,087.3	-\$4,980.0

PERMANENT WORKYEARS

Scientific Assessment- Superfund	11.8	14.1	14.1	14.1	
Monitoring Systems & Quality Assurance - Superfund	25.9	25.3	25.3	26.3	1.0
Health Effects	3.0	3.0	3.0	3.0	
Environmental Engineering & Technology - Superfund	41.5	47.9	47.9	48.9	1.0
Environmental Processes & Effects - Superfund	7.0	9.5	9.5	11.5	2.0

SUPERFUND
Hazardous Substances Research

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Exploratory Research		1.0	1.0	1.0	
Technical Information And Liaison	.5	2.0	2.0	2.0	
TOTAL PERMANENT WORKYEARS	89.7	102.8	102.8	106.8	4.0
TOTAL WORKYEARS					

Scientific Assessment- Superfund	12.6	14.1	14.1	14.1	
Monitoring Systems & Quality Assurance - Superfund	26.6	25.3	25.3	26.3	1.0
Health Effects	3.0	3.0	3.0	3.0	
Environmental Engineering & Technology - Superfund	44.3	47.9	47.9	48.9	1.0
Environmental Processes & Effects - Superfund	7.0	9.5	9.5	11.5	2.0
Exploratory Research		1.0	1.0	1.0	
Technical Information And Liaison	.5	2.0	2.0	2.0	
TOTAL WORKYEARS	94.0	102.8	102.8	106.8	4.0

SUPERFUND

Hazardous Substance Research

Principle Outputs by Objective

Objective 1: Provide Techniques and Procedures for Site and Situation Assessment

- 1990: o Health and Environmental Effects Documents (Sci. Assessment)
o Report on Evaluation and Improvement of Protective Clothing, Equipment and Procedures for Hazardous Substance Response Operations (Engineering)
- 1989: o Health and Environmental Effects Documents (Sci. Assessment)
o Technical Guidance Document on Emerging Technology for the Treatment of Metal-Bearing Wastes (Engineering)
- 1988: o Prototype Cost Engineering Models for Remedial Response Technologies (Engineering)

Objective 2: Develop Technologies to Manage Uncontrolled Waste Sites

- 1990: o Handbook of In-Situ Treatment of Hazardous Waste (Sci. Assessment)
o Technical Report on Field Testing of White Rot Fungus for the Destruction of Hazardous Waste (Engineering)
- 1989: o Status Report on Best Demonstrated Available Technologies (BDAT) for Superfund Wastes (Engineering)
- 1988: o Assessment Report for Stabilization/Fixation Methods for Soils

Objective 3: Provide Information on Personal Health, Protective Equipment, and Procedures

- 1990: o Report on the Development of Methodology for Determining the Reliability of Flexible Membrane Liners (Engineering)
- 1989: o Interim Report on Improvement of Worker Safety via Robotics, Automation, and Task Modification (Engineering)
- 1988: o Technical Report on the Evaluation of Personal Hazard Detectors for Highly Toxic Chemicals (Engineering)

Objective 4: Support Reportable Quantities Regulatory Efforts

- 1990: o Reportable Quantity Chapters for Health and Environmental Effects Documents (Sci. Assessment)
- 1989: o Reportable Quantity Chapters for Health and Environmental Effects Documents (Sci. Assessment)
- 1988: o Reportable Quantities Documentation for Carcinogenicity and Chronic Health Effects (Sci. Assessment)

Objective 5: Provide Technical Support to Enforcement, Program, and Regional Offices

- 1990: o Report on Development and Application of Toxicity Bioassays for Field Use at Superfund Sites (Envir. Processes)
- 1989: o Evaluation of Bioremediation as a Remedial Action Technology (Envir. Processes)
 - o Aerial Remote Sensing Program for Hazardous Waste Sites (Monitoring)
- 1988: o Engineering Research Symposia for Selected Regions (Engineering)

Objective 6: Provide Quality Assurance Support for Superfund Program Requirements

- 1990: o Annual Report on Quality Assurance Support to the Contract Laboratory Program (Monitoring)
- 1989: o Annual Report on Quality Assurance Support to the Contract Laboratory Program (Monitoring)
- 1988: o Annual Report on Quality Assurance Support to the Contract Laboratory Program (Monitoring)

Objective 7: Provide Technology Transfer

- 1990: o Annual Report on Technology Transfer Activities (Tech. Info.)
- 1989: o Annual Report on Technology Transfer Activities (Tech. Info.)
- 1988: o Annual Report on Technology Transfer Activities (Tech. Info.)

Objective 8: Conduct Alternative/Innovative Technology Research, Development and Demonstration

- 1990: o Reports on Evaluations Conducted Under the SITE Program with Applications Analyses (Envir. Engineering)
 - o SITE Annual Report to Congress (Envir. Engineering)

- 1989: o Report on Ten SITE Program Demonstrations and Applications Analyses (Envir. Engineering)
o SITE Annual Report to Congress (Envir. Engineering)
o Annual Report on Development and Demonstration of Immunoassay Detection System for Rapid Screening at Superfund Sites (Monitoring)

- 1988: o SITE Annual Report to Congress (Envir. Engineering)

Objective 9: Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research

- 1990: o Annual Report on Superfund Health Risk Research (Sci. Assessment)
o Report on Portable X-Ray Fluorescence for Characterizations of Hazardous Waste Sites (Monitoring)
- 1989: o Annual Report on Superfund Health Risk Research (Sci. Assessment)
- 1988: o Report on the Genetic Activity Profiles of Superfund Priority Group 2 Chemicals (Health)

Objective 10: Manage University Hazardous Substance Research Centers

- 1990: o Annual Report on the Hazardous Substances Research Centers
- 1989: o Annual Report on the Hazardous Substance Research Centers
- 1988: o Annual Report on the Hazardous Substance Research Centers



SUPERFUND

Hazardous Substance Research

Budget Request

The Agency requests a total of \$68,087,300 supported by 106.8 total workyears for 1990, a decrease of \$4,980,000 and an increase of 4.0 total workyears over the 1989 level. All of the request will be for the Hazardous Substance Superfund appropriation. The decrease in funding results because of the inclusion of \$5,000,000 in 1988 carryover funds in the current 1989 budget. These funds were appropriated in 1988 for establishment of five university-based Research Centers. However, because of the lengthy selection process, the Agency was unable to obligate the funds in 1988.

Program Objectives

The Superfund research and development program provides a core of scientific and technical information to support implementation of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The research program concentrates on assessing the health and environmental risks posed by Superfund sites and on evaluating equipment and techniques for discovering, assessing, preventing, removing, and disposing of hazardous substances released into the environment.

Objective 1: Provide Techniques and Procedures for Site and Situation Assessment. This research provides techniques and procedures to allow on-site coordinators and remedial project managers to quickly and effectively assess the degree of hazard posed at specific uncontrolled waste sites.

Objective 2: Develop Technologies to Manage Uncontrolled Waste Sites. This research program develops and evaluates technologies which are not yet ready for field application and require additional lab development. These technologies are being developed by the Agency as tools for cleanup under the Superfund program. This development activity must be carried out by the Agency because of the low commercial interest, low potential for profit, or because of the high economic risks associated with the development of the technology.

Objective 3: Provide Information on Personnel Health, Protective Equipment, and Procedures. This research provides evaluation and assessment of the technologies applicable to ensuring personnel health and safety during removal and remedial response operations.

Objective 4: Support Reportable Quantities Regulatory Efforts. This research supports Superfund regulatory efforts by ranking and assigning reportable quantities to chemicals based upon either carcinogenicity or chronic health effects information. This information is then used by the program office to adjust reportable quantities for these chemicals.

Objective 5: Provide Technical Support to Enforcement, Program and Regional Offices. This research provides review of remedial action design and implementation plans and review of new data submitted by liable parties for specific site problems. Review and technical expertise is also provided to the Enforcement program and the Regional offices.

Objective 6: Provide Quality Assurance Support for Superfund Program Requirements. This program provides extensive support to the National Contract Laboratory Program. Activities include development and promulgation of analytical methods to measure and characterize samples from Superfund sites, and review and evaluation of quality assurance and quality control plans.

Objective 7: Provide Technology Transfer. This program disseminates information to the Program office, Regions, states and local authorities to assist them in Superfund site cleanups.

Objective 8: Conduct Alternative/Innovative Technology Research, Development and Demonstration. This program fulfills the Agency's responsibility under SARA Section 311(b) to carry out a comprehensive program of research, development and demonstration for the purpose of promoting the commercialization of innovative and alternative treatment and monitoring technologies.

Objective 9: Conduct Health Effects/Risk Assessment and Detection Research. This program fulfills the Agency's responsibility under SARA Section 311(c) to carry out a comprehensive program of research and development to enhance the Agency's scientific capabilities to detect, assess, and evaluate effects on, and risks to, human health from hazardous substances.

Objective 10: Manage University Hazardous Substance Research Centers. This program funds research and training related to the manufacture, use, transportation, disposal, and management of hazardous substances through a university based centers program as authorized under SARA Section 311(d).

Objective 11: Alternative/Innovative Treatment Technology Test Facility. This program will provide the funds to fully establish the Test and Evaluation facility at Edison, NJ, by providing required monitoring, emissions control and other equipment for the facility.

Objective 13: Conduct Research at the Gulf Coast Hazardous Waste Research Center. The Gulf Coast Hazardous Waste Research Center is a university-based research center comprised of eight institutions of higher education and located at Lamar University. Under joint Agency and state funding, it will conduct hazardous waste research on issues indigenous to the Gulf Coast area.

Objective 14: Superfund Scientific Instrumentation. This program provides support for ORD research for scientific instrumentation and equipment with cost under \$50,000.

SCIENTIFIC ASSESSMENT

1990 Program Request

The Agency requests a total of \$4,226,300 supported by 14.1 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$150,000 in funding and no change in total workyears. The reduction reflects a reallocation of some non-personnel related resources to areas of higher priority research.

Provide Techniques and Procedures for Site and Situation Assessment. Site-, chemical-, and situation-specific exposure assessment and risks assessments will be prepared to assist the program office, Enforcement, and the Regions in evaluating the degree of hazard at uncontrolled waste sites during the remedial investigation and feasibility study (RI/FS) process. Specific activities will include the preparation of health effects assessments and participation in the development, review, and implementation of toxicology profiles.

Support Reportable Quantities Regulatory Efforts. Chemical-specific health effects documentation (cancer and other chronic effects) will be provided to the Office of Emergency and Remedial Response (OERR) for use in adjusting the Reportable Quantity amounts for various hazardous substances. These two risk categories are among those which are considered by the program office in adjusting Reportable Quantity amounts of given hazardous substances to reflect the potential hazard associated with their release into the environment.

Provide Technical Support to Enforcement, Program and Regional Offices. Site- and chemical-specific health assessments will be prepared to assess the relative health risk associated with remedial activities at Superfund sites at which Enforcement has the lead for implementing remedial responses. The Regional Risk Assessment Review Group will conduct reviews of risk assessments submitted by EPA Regional offices.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. Scientific assessment research will develop toxicity assessments and risk characterization and exposure assessments. Screening techniques for early detection and for adverse health effects and improved measurement techniques for non-cancer health end-points will be developed. An extensive program of pharmacokinetics modeling and exposure assessment methodology development is planned.

1989 Program

In 1989, the Agency is allocating a total of \$4,376,300 supported by 14.1 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. Site-, chemical-, and situation-specific exposure and risk assessments are being prepared to assist Superfund operations, Enforcement, and the Regional offices in evaluating alternative cleanup decisions at uncontrolled Superfund sites. Activities include development of toxicological profiles, and provision of rapid response health assessments. Chemical-specific data are being provided on carcinogenicity and on chronic effects to support the Superfund activities necessary to adjust or establish

the Reportable Quantities (RQ) for hazardous substances. The Regional Risk Assessment Review Group was established.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,166,700 supported by 12.6 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. The program produced 43 health and environmental effects documents and rapid response health assessments, and carcinogenic and chronic health effects documents for many hazardous substances to support reportable quantity adjustment. The program assisted with health and risk assessment of sites for the Enforcement office. Thirteen toxicological profiles were completed in 1988.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1990 Program Request

The Agency requests a total of \$13,322,500 supported by 26.3 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$389,300 and 1.0 total workyear. The increase reflects increased personnel and support costs and additional support for research in advanced field monitoring techniques.

Provide Techniques and Procedures for Site and Situation Assessment. Monitoring procedures for all media will be evaluated, validated and standardized. Analytical protocols, sampling techniques and data interpretation approaches will be prepared. Techniques to be investigated include air monitoring techniques for ambient and source sampling, sample preparation methods, automated data transfer techniques, geophysical methods, and remote sensing techniques.

Provide Technical Support to Enforcement, Program and Regional Offices. Site-specific technical assistance, and monitoring and characterization support will continue to be provided to the Program and Regional offices in response to their needs for accurate and precise site-specific data. This will include providing aerial imagery, photographic interpretation, and maps for pre- and post remedial site assessment. Oversight reviews for the monitoring portions of settlement agreements will be provided. In addition, support will be provided in the areas of ground water sampling, network design, use of geophysical techniques, and analytical methods.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. The program to develop advanced field monitoring techniques for measurement of hazardous substances will continue. Technologies which are now primarily used in the laboratory will be adapted and further developed for field use to provide techniques and methods that allow more focused, complete, expedient, and cost-effective field monitoring for common hazardous substances at Superfund sites. The application of these in-the-field monitoring techniques and methods will accelerate site cleanup and reduce costs. Activities will focus on the development, evaluation, and standardization of field analytical and sampling methods; development of cost effective sampling designs and approaches; and development of techniques for managing and

interpreting field data. Immunoassay systems for screening single compounds or classes of compounds and field portable systems such as fiber optics chemical sensors and x-ray fluorescence will be developed. Since volatile organic compounds are the most common contaminants at Superfund sites, initial analytical and sampling efforts will focus on these compounds. New screening methods for exposure assessment (exposure biomarkers) will be developed.

Provide Quality Assurance Support for Superfund Program Requirements. Quality assurance support will be provided to the Contract Laboratory Program (CLP) to ensure that data of known and documented quality are used in the Superfund program. A quality assurance program provides the basis for determining the accuracy of data used to make operational decisions. Quality assurance reference materials, such as calibration standards, quality control samples and performance evaluation samples will be prepared and distributed according to uniform and consistent protocols, for analysis by contract laboratories. The analytical data generated by the laboratories are audited in order to assess intra- and inter-laboratory performance and methods performance. These data are maintained in the Quality Assurance/Quality Control Data Base. Pre-award and post award on-site contract laboratory inspections are performed to complement the performance evaluations.

Conduct Alternative/Innovative Technology Research, Development and Demonstration. Resources in 1990 will be used to demonstrate and evaluate innovative monitoring technologies. This will be a cooperative program with the private sector to determine technology applicability to Superfund site assessment and pollutant characterization. Monitoring techniques lacking private sector support, which are not yet ready for demonstration, also will be evaluated and further developed for validation and demonstration. Technologies to be investigated will be selected from candidates currently being researched and/or developed in the private sector.

1989 Program

In 1989, the Agency is allocating a total of \$12,933,200 supported by 25.3 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. Innovative technologies and approaches that offer potentially significant cost and time savings to Superfund site investigations are being given priority for investigation. In the area of advanced field monitoring methods, a range of technologies meeting the above criteria will be studied, including field portable x-ray technology for metals detection, fiber optic technology for in situ ground water monitoring, immunoassay methods for organics detection, field portable gas chromatography for volatile organics monitoring, and canister-based air samplers for detection of volatile organics. Field sampling quality assurance research has been introduced in 1989. This effort will focus on developing standardized sampling guidance and audit procedures. Site and situation assessment procedures, such as analytical protocols, sample preparation procedures, and data interpretation procedures are being developed, evaluated, or demonstrated. Site-specific technical assistance will continue to be provided in numerous areas, including remote sensing, geophysical support, sampling and monitoring, and GIS. Quality assurance support also will be provided in 1989. Pre- and post-award onsite contract laboratory inspections are being performed to complement the performance evaluation studies.

1988 Accomplishments

In 1988, the Agency obligated a total of \$12,728,300 supported by 26.6 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. During 1988, a geostatistical environmental assessment software package that constructs contour maps of pollutant concentrations was completed. The package provides procedures that assist the site and situation assessments ongoing in the EPA Regions. Much site-specific technical assistance was provided by the program during 1988. At least 30 topographic maps and 400 aerial images (photographs) were analyzed as part of the program's remote sensing support. Support to enhance user competency of Geographic Information Systems (GIS) continued. During 1988, GIS demonstrations were provided to four EPA Regions. The program also provided quality assurance support, including reference materials, performance evaluation samples, and laboratory audits to six EPA Regions.

HEALTH EFFECTS

1990 Program Request

The Agency requests a total of \$3,825,300 supported by 3.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$80,300 in funding and no change in total workyears. This increase reflects increased personnel and support costs.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. This program provides improved evaluation measures and data to detect, assess, and evaluate human health risk from hazardous substances at Superfund sites. This work includes providing methods to evaluate the hazard potential of waste mixtures, screening techniques for early detection of adverse health effects, and identification and improvement of measures of health endpoints, particularly non-cancer endpoints such as reproductive effects and neurotoxicity.

1989 Program

In 1989, the Agency is allocating a total of \$3,745,000 supported by 3.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. In 1989, the health effects research program is working to provide methods to detect, assess, and evaluate the risks to human health from hazardous substances associated with Superfund sites. Test methods are being developed for the evaluation of hazard potential of waste mixtures, as are predictive techniques that can reduce uncertainties in risk assessment caused by data limitations. This research is focused on improving the EPA Superfund risk assessment process and is coordinated with the scientific assessment program and activities of the Program office, as well as with the research activities of both the National Institute of Environmental Health Sciences (NIEHS) and the Agency for Toxic Substances and Disease Registry (ATSDR).

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,696,700 supported by 3.0 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. Research on rapid response toxicity testing, dose measurement techniques and development of methods for predicting neurotoxic effects from complex mixtures occurred.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$32,201,600 supported by 48.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$202,100 and an increase of 1.0 total workyears. The workyear increase reflects staff support for the development of an expert system to aid decision-makers in such areas as construction design, screening, and selection of remedial alternatives at Superfund sites. The decrease reflects the combined effects of a disinvestment in equipment resources for the Test and Evaluation facility at Edison, NJ, the addition of resources for the Gulf Coast Research Center, and the enhancement of support for the Superfund Innovative Technology Evaluation (SITE) program.

Provide Techniques and Procedures for Site and Situation Assessment. Engineering expertise and assessment procedures will be provided to assist the Superfund program in RI/FS studies at specified Superfund sites. Information will be provided on the cost and effectiveness of remedial action technologies for specific sites based on data collected from surveys and technology evaluations. Emphasis will continue to be placed on the development of support tools to assist with RI/FS activities. Information will be provided on the biochemistry and genetics of PCB degradation by bacteria and on the evaluation of solidification techniques for hazardous waste treatment.

Evaluate Technologies to Manage Uncontrolled Waste Sites. Evaluations will be conducted on technologies which are being developed as cleanup tools for Superfund sites but which are not yet at the stage of being available for field application. Activities will continue to focus on technologies involving extraction, degradation and/or detoxification, immobilization studies for solidification and/or stabilization of contaminated material combustion research biosystems and/or stabilization biosystems technology, in situ techniques for large municipal waste NPL sites, cross-media impacts of technologies, and BDAT development of Superfund wastes. Increased emphasis will be placed on biosystems research due to its potential to significantly reduce the cost of site cleanups and because the private sector has shown limited interest because of the high economic risks.

Provide Information on Personnel Health, Protective Equipment and Procedures. Personnel protective clothing, equipment, and procedures suitable for use at Superfund sites will be evaluated. This will include identification and evaluation of promising new protective materials, garments, respirators, personal hazard detectors, and equipment. Evaluation of the use of robotics at Superfund sites has been completed.

Provide Technical Support to Enforcement, Program and Regional Offices. Technical support will be provided to Agency and state personnel on engineering issues that arise during emergency and remedial response at Superfund sites for case support. Information from Superfund research will be provided to ensure that the latest available procedures and technologies are employed.

Conduct Alternative/Innovative Technology Research, Development and Demonstration. The innovative treatment technology demonstration program (SITE) will continue to be focused on separation, chemical stabilization, detoxification and destruction technologies that provide potential for improvement in cleanup at Superfund sites. SITE is composed of a field demonstration and evaluation component, an emerging technology component that cost shares development of promising technological ideas from the concept stage to pilot scale demonstration, and a technology transfer component which consists of project evaluation reporting and the SITE clearinghouse. Ten additional field demonstrations will be conducted and eight new emerging technologies projects will be added.

Provide Research in Prevention of Accidental and Chronic Releases of Hazardous Substances. Research will be initiated on the engineering aspects of pollution plume modeling and process measurement and monitoring techniques to assist State and local governments and private organizations in planning for and responding to risks posed by hazardous substance releases.

Conduct Research at the Gulf Coast Hazardous Substance Research Center. This Center is jointly funded by the Agency and the State of Texas to research hazardous waste technological issues indigenous to the Gulf Coast area. It is a consortium of eight institutions of higher education, with Lamar University serving as grantor. The Center is operated through a cooperative agreement and will initially conduct research in the areas of pollution prevention, treatment technologies and technology transfer.

1989 Program

In 1989, the Agency is allocating a total of \$32,403,700 supported by 47.9 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. In 1989, the engineering research program is working to provide improved and innovative technologies for cleaning up Superfund sites more economically. There is an expansion of the research into the use of biological degradation (biosystems) for such cleanups. The SITE information clearinghouse is being expanded by the addition of a computer system that integrates all components of the clearinghouse. Ten additional SITE field demonstration projects are planned and eight new emerging technology projects will be selected for evaluation. The 1990 solicitation will be made in 1989 and call for projects that deal with treatment of contaminated soils and sludge. Equipment for the Test and Evaluation Facility will be procured.

1988 Accomplishments

In 1988, the Agency obligated a total of \$26,427,700 supported by 44.3 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. During 1988, the program provided engineering technical support to review site assessment and feasibility plans and advise on remedial action where demonstrated. Work continued on the demonstration of in-

situ control technologies with focus on activities in the most promising combined systems at field-scale application. Work continued in the SITE program to demonstrate on-site control technologies that can extract, degrade, detoxify, or immobilize contaminants. Six field demonstrations were completed in the area of thermal extraction technologies (2), solidification/stabilization (2), in situ vacuum extraction (1), and solvent extraction (1). Eight emerging technologies projects were initiated.

ENVIRONMENTAL PROCESSES AND EFFECTS

1990 Program Request

The Agency requests a total of \$5,218,300 supported by 11.5 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$352,500 and 2.0 total workyears. The increase reflects additional resources for technical support for substance modeling for the Superfund research program and for increased personnel and support costs

Develop Technologies to Manage Uncontrolled Waste Sites. Environmental processes work will be expanded on the cleanup potential of in situ biodegradation techniques (biosystems) related to contaminated soils and ground water. The expanded activity in this area is integrated with biosystems research in the engineering program and is an integral part of the efforts needed to bring these new, less costly, cleanup technologies to the field for use in achieving permanent site remediation as required by SARA. New activity will include characterizing the subsurface biological, chemical, and physical processes that promote in situ bio-remediation; environmentally enhancing the metabolic capabilities of indigenous microorganisms for biodegradation; and genetically manipulating microorganisms to design microbial strains with novel and enhanced biodegradation characteristics. Research will also focus on the ecological effects that might be associated with these biodegradation technologies. Potential environmental and health effects associated with genetically engineered organisms will be evaluated.

Provide Technical Support to Enforcement, Program and Regional Offices. Technical support will be provided to Agency and state personnel on the use of subsurface models, sampling and analytical techniques, assessment of contaminated marine coastal areas, development of exposure/risk assessment methodologies, and on the application of bioassessment protocols for determining the toxicity of contaminated sites and samples. Work on the bioassessment protocol will be expanded with applications at actual Superfund sites for validation of the technique under rigorous, complex waste situations. These activities are needed to support program office activities to prioritize sites on the basis of their risk.

1989 Program

In 1989, the Agency is allocating a total of \$4,865,800 supported by 9.5 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. Research is being initiated on the cleanup potential of in situ biodegradation techniques related to contaminated soils and ground water. This research is closely coordinated with the engineering evaluations

of techniques to prevent the migration of hazardous substances into ground water, and will be instrumental in determining whether biodegradation methods are potentially cost-effective alternatives to soil excavation or withdrawal and treatment of contaminated ground water. Technical support is being provided to Agency and state staffs for site-and case-specific issues.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,142,100 supported by 7.0 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. During 1988, technical support was provided in response to specific requests from EPA Regions, Enforcement, and states on ground water sampling, analyses, data interpretation and site-specific modeling. Plume movement and biological stabilization of subsurface contaminants were evaluated and uptake of contaminants by fish was studied.

EXPLORATORY RESEARCH

1990 Program Request

The Agency requests a total of \$8,600,000 and 1.0 total workyear for this program, all of which will be for the Hazardous Substances Superfund appropriation. This decrease of \$5,450,000 is primarily caused by the availability of \$5,000,000 in carryover for the Hazardous Substance Research Centers. In addition, resources for the Gulf Coast Research Center which will be established in 1989 will be transferred to the Engineering program in 1990. There is no change in total workyears.

Conduct Hazardous Substances Health Effects/Risk Assessment and Detection Research. Targeted grants in the area of in-situ treatment of hazardous waste and monitoring for Superfund site assessments will be awarded. In addition, targeted grants in two new areas of research relevant to the Superfund program will be initiated. Approximately ten new grants will be awarded in 1990.

Manage University Hazardous Substances Research Centers. Five competitive Hazardous Substances Research Centers will continue to fund research and training in areas related to the manufacture, use, transportation, disposal, and management of hazardous substances. This program is considered by the Agency to be an important part of the overall multidisciplinary research program to address health, environmental, and engineering issues associated with hazardous substances. This university based program will foster the application of academic expertise in basic research to Superfund issues.

Superfund Scientific Instrumentation. This program provides scientific instrumentation support to ORD research. Resources for 1990 will purchase needed equipment such as gas and high pressure liquid chromatographs, emission spectrometers and other bench testing equipment and instruments.

1989 Program

In 1989, the Agency is allocating a total of \$14,050,000 supported by 1.0 workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. In 1989, a targeted grants program is fundin

research on hazardous waste abatement and control with the focus on biodegradation of hazardous organics at Superfund sites. The Hazardous Substances Research Centers program was initiated when peer review panels reviewed proposals and selected five University-based centers that will fund research and training on the manufacture, use, transportation, disposal, and management of hazardous substances.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,128,500 supported by no workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. In 1988, a targeted competitive grants research program was established to fund applied research on hazardous substances abatement and control activities. The initial focus was on the study of in-situ methods for decontamination of ground water and development of rapid analytical methods applicable to complex mixtures at Superfund sites. A national solicitation for funding proposals for the Hazardous Substance Research Centers program was issued. Peer review panels were established to review proposals and recommend awards in response to the solicitation.

TECHNICAL INFORMATION AND LIAISON

1990 Program Request

The Agency requests a total of \$693,300 and 2.0 total workyear for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in dollars or total workyears.

Provide Technology Transfer. This activity provides technology transfer and training assistance on issues relevant to the Superfund cleanup program for the Program office, EPA Regions, and states.

1989 Program

In 1989, the Agency is allocating a total of \$693,300 supported by 2.0 total workyear for this program, all of which is from the Hazardous Substances Superfund appropriation. This program is coordinating technology transfer activities, and delivering technological information and training to the Program office, Regions, states and contractors responsible for cleanup activities. This activity enhances the effective, timely, and efficient planning of permanent solutions in Superfund response actions.

1988 Accomplishments

In 1988, the Agency obligated a total of \$582,200 supported by 0.5 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. This program developed mechanisms to coordinate ORD technology transfer activities, and delivered technological information to the program office, Regions, States and contractors responsible for cleanup activities.



Hazardous Substance Response Actions

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	14-1
HAZARDOUS SUBSTANCE RESPONSE	
Hazardous Substance Response.	14-25
Hazardous Spill and Site Response.	14-26
Hazardous Substance Response - Support.	14-34
Hazardous Substance Response - Office of Water	14-35
Hazardous Substance Response - Office of Air and Radiation	14-37
Hazardous Substance Response - Interagency.	14-38
Department of Health and Human Services.	14-40
United States Coast Guard.	14-42
Department of Justice.	14-43
Federal Emergency Management Agency.	14-43
National Oceanic and Atmospheric Administration.	14-44
Department of the Interior	14-45
Occupational Safety and Health Administration.	14-46

SUPERFUND
Hazardous Substance Response

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Hazardous Spill & Site
Response

Hazardous Substance Superfund	\$1150,977.8	1027,167.3	1184,151.3	1345,300.3	\$161,149.0
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TOTAL	\$1150,977.8	1027,167.3	1184,151.3	1345,300.3	\$161,149.0
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TOTAL:

Hazardous Substance Superfund	\$1150,977.8	1027,167.3	1184,151.3	1345,300.3	\$161,149.0
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Hazardous Substance Response	TOTAL \$1150,977.8	1027,167.3	1184,151.3	1345,300.3	\$161,149.0
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PERMANENT WORKYEARS

Hazardous Spill & Site Response	1,023.2	1,034.9	1,124.3	736.7	-387.6
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TOTAL PERMANENT WORKYEARS	1,023.2	1,034.9	1,124.3	736.7	-387.6
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TOTAL WORKYEARS

Hazardous Spill & Site Response	1,092.5	1,089.7	1,178.9	1,236.7	57.8
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TOTAL WORKYEARS	1,092.5	1,089.7	1,178.9	1,236.7	57.8
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SUPERFUND

Hazardous Substance Response - Environmental Protection Agency

Budget Request

The Agency requests a total of \$1,345,300,300 for the Hazardous Substance Superfund appropriation. Of these resources, \$72,758,800 will be for the salaries and expenses to support 1,236.7 total workyears. This resource level represents an increase of \$161,149,000 and 57.8 total workyears from 1989. The increase reflects the continuing growth of design and construction activities at National Priorities List (NPL) sites.

In 1989, the Agency is allocating a total of \$1,184,151,300 from the Hazardous Substance Superfund appropriation. Of these resources, \$64,567,700 is for salaries and expenses to support 1,178.9 total workyears.

In 1988, the Agency obligated a total of \$1,150,977,800 from the Hazardous Substance Superfund. Of these resources, \$61,186,500 was for salaries and expenses to support 1,092.5 total workyears.

PRE-REMEDIAL PROGRAM

1990 Program Request

The Agency requests a total of \$83,534,000 for the Pre-remedial Program from the Hazardous Substance Superfund appropriation. This represents a decrease of \$1,635,000 from 1989 levels. The majority of these resources support preliminary assessment (PA) and site inspection (SI) activities conducted at potential Superfund sites. Reductions in this program area reflect the completion of the revised Hazard Ranking System (HRS) and National Contingency Plan (NCP).

In 1990, the Pre-remedial Program will continue to place an emphasis on improving the effectiveness of site screening during the early stages of site evaluation to ensure that the Agency's responses are focused on the most serious environmental and public health threats. The Agency will strive to meet the Superfund Amendments and Reauthorization Act (SARA) mandated goal that all sites will be evaluated for inclusion on the NPL within four years of initial discovery. In addition, the Agency, in cooperation with the states, will fully implement the new HRS. Work directed toward pre-remedial activities will continue at a stable level for preliminary assessments and site inspections targeting the most environmentally significant sites for further action.

1989 Program

In 1989, the Agency is allocating a total of \$85,169,000 from the Hazardous Substance Superfund appropriation for the Pre-remedial Program. The Agency is developing and implementing procedures to identify and characterize sites that represent the greatest environmental and public health threats from

hazardous substances. The revised HRS enables the Agency to expedite site planning activities through improved initial site characterization. As a result, available resources may be directed toward the sites that have the most immediate need for response. The Agency is striving to meet the pre-remedial completion deadlines imposed by SARA to perform SIs where PAs have shown they are warranted.

1988 Accomplishments

In 1988, the Agency obligated a total of \$71,037,000 for the Pre-remedial Program from the Hazardous Substance Superfund appropriation. The Agency has met the SARA mandated goal to conduct PAs by January 1, 1988, at all sites on Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) at the time of the enactment of SARA. The program completed 2,884 PAs and 1,237 SIs. By the end of 1988, two of the ten Regions were close to meeting their SARA mandated goal for SI completions. In addition, the program added over 200 proposed sites to the NPL. The Agency has revised the HRS to put in place mechanisms to address high priority releases first.

REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)

1990 Program Request

The Agency requests a total of \$98,500,000 for this program from the Hazardous Substance Superfund appropriation. This represents a decrease of \$1,000,000 from 1989 levels. This reduction is in support of the Agency plans to fund remedial projects that will be ready for construction in 1990.

In 1990, the Agency will start 55 new and 25 subsequent RI/FS. The Agency will issue guidance and provide technical assistance on the use of applicable relevant and appropriate requirements in setting response standards, streamlined RI/FS, public health risk assessment, environmental evaluation and implementation of the new remedy selection process. Emphasis will also be placed on implementing a quality control program on risk assessment in the Regions. By the end of 1990, the RI/FS full funding strategy, which was begun in 1988, will be completed. Other initiatives to streamline project costs and reduce RI/FS budgets will also be implemented.

1989 Program

In 1989, the Agency is allocating a total of \$99,500,000 for this program from the Hazardous Substance Superfund appropriation. The Agency plans to initiate new Fund-financed RI/FS at 43 projects and to start subsequent RI/FS at 18 projects. With RI/FS projects that are overseen by potentially responsible parties (PRPs) and funded through the Enforcement Program, the Agency will meet the SARA schedule for RI/FS project starts. Initiatives to prevent or minimize cost growth in RI/FS are being implemented, and include: performance incentives such as cost and schedule control for remedial contractors under the ARCS; policy and guidance to streamline RI/FS projects by reducing the amount of work required to support a remedy selection decision; and a three year full-funding strategy and average cost ceiling. In an effort to better assess the factors contributing to the cost of performing a RI/FS, the Agency published a cost evaluation of the process in October 1988. The evaluation included several recommendations for cost cutting measures. The Agency anticipates that the full-funding strategy will complement other ongoing efforts to reduce RI/FS budgets and improve cost management.

1988 Accomplishments

In 1988, the Agency obligated a total of \$142,410,400 for this program from the Hazardous Substance Superfund appropriation. At the end of 1988, 203 of the total RI/FS project initiations mandated by SARA had been started. The overall number of Records of Decision signed during the fiscal year was approximately double that of 1987. The program also developed interim guidance for the NCP. The guidance implemented a site-specific process in which nine criteria are analyzed to make a decision concerning the final remedy selection for a project.

REMEDIAL DESIGN (RD)/REMEDIAL ACTION (RA)

1990 Program Request

The Agency requests a total of \$675,621,400 for the RD and RA stages of the Remedial Program for the Hazardous Substance Superfund appropriation. This total amount includes \$20,200,000 for projects with PRP oversight and \$655,421,400 for Fund-financed projects. This request represents an increase of \$160,972,700 for remedial design and construction activities from 1989 levels.

In 1990, the Superfund Program will continue to emphasize response actions financed by PRPs. PRPs will oversee 65 new designs and 20 subsequent design initiations at remedial projects. In addition, PRPs will begin 50 new actions and 15 subsequent actions.

The Superfund Trust Fund will assume responsibility for all projects where PRP response is not achieved. In 1990, the Fund will finance 75 new designs and 35 subsequent designs at remedial projects. In addition, the Fund will be responsible for the starting 41 new and 24 subsequent remedial action projects. Of these 65 projects, 30 will have been deferred from 1989, and will have the highest priority for funding in 1990.

1989 Program

In 1989, the Agency is allocating a total of \$514,648,700 for this program from the Hazardous Substance Superfund appropriation. The Agency will continue progress toward the SARA mandated deadlines (e.g., 175 remedial action starts by October 1989 and the additional 200 starts by 1991), while ensuring steady funding of those projects that are ready to proceed to construction. The Agency continues to encourage PRP participation in the Superfund Program through the timely completion of negotiations and effective use of the settlement authorities in SARA. PRPs are responsible for preparing designs at 67 new projects and at 16 subsequent projects. PRPs will also start new actions at 44 projects and subsequent actions at 7 projects. The Trust Fund will begin new designs at 61 sites and subsequent designs at 35 projects. In addition, the Trust Fund will commence 23 new actions and 21 subsequent actions at remedial projects. The Agency also performs long term activities at sites, after the RA is completed, to ensure that the hazardous condition(s) has been permanently remedied.

1988 Accomplishments

In 1988, the Agency obligated a total of \$551,488,700 for this program from the Hazardous Substance Superfund appropriation. Resources were used to initiate only Fund-financed remedial projects in 1988. PRP oversight of cost

and program management was funded through the Agency's Enforcement project. Of the designs started, 39 were new and 30 were subsequent projects. For RAs, 37 were started at new projects and 14 at subsequent projects.

REMOVAL ACTIONS

1990 Program Request

The Agency requests \$99,750,000 for this program for the Hazardous Substance Superfund appropriation. This represents a decrease of \$5,500,000 from 1989 levels. This reduction reflects the Agency's initiative to redirect resources to the remedial program in an effort to fund remedial projects that are ready for construction.

In 1990, the Agency will continue to use its expanded removal authorities for emergency actions. The Removal Program will remain in a steady state as it continues to stabilize NPL sites where significant threats exist while additional long-term response is being considered.

1989 Program

The Agency is allocating \$105,250,000 workyears for removal actions from the Hazardous Substance Superfund appropriation. Removal actions enable the Agency to initiate immediate response to protect public health and the environment and do not require completion of a long-term analysis of the site or the results of more detailed site assessments. In addition to responding to emergencies, removals may be initiated when an immediate response is not critical, but some early response is necessary to protect public health or the environment. The Agency is planning to provide emergency responses at 190 major hazardous substance releases.

1988 Accomplishments

In 1988, the Agency obligated a total of \$95,249,100 for removal actions from the Hazardous Substance Superfund appropriation. These resources were used to conduct removal actions at 53 NPL sites and at 161 non-NPL sites. In addition, removal actions were completed at 42 NPL and 155 non-NPL sites. Completions included sites that were started in previous years.

RESPONSE SUPPORT

1990 Program Request

The Agency requests a total of \$103,562,000 for the Response Support Program from the Hazardous Substance Superfund appropriation. This represents a decrease of \$7,060,000 from 1989 levels. The majority of these resources support: sample analysis services; technical training to on-scene coordinators (OSCs), Remedial Project Managers (RPMs), and states; policy analysis; and budget development. The decrease in requested funds is attributed to the reduction in management costs due to the shift from nationally managed remedial contracts to contracts managed within the Regions.

In 1990, the Response Support Program will resume its responsibilities for sample analysis and data review for all phases of the pre-remedial, remedial and removal programs. The Laboratory Program anticipates conducting at least 130,000 samples during 1990 through its 96 sample laboratories. Consistent

with the goal of increasing the quality assurance (QA) of sample related activities, programs will expand and improve auditing efforts at Superfund sites. In addition, the program will continue to be active in assisting the states with establishing their QA programs.

The Response Support Program will continue to ensure that the training and transfer of technology from the Office of Research and Development, other Federal agencies, and the private sector is available to OCSs, RPMs, the states, and Superfund contractors. Activities undertaken to ensure the transfer of information and technologies will include: 1) updating the treatability data base; 2) conducting joint seminars with Office of Research Development in the Regions; 3) enhancing analytical services to meet site assessment needs; and 4) expanding the electronic bulletin board to include the private sector. The program will also continue to assess and evaluate the Remedial Program for improvements and management initiatives. Some of these initiatives will be to: improve the process for conducting remedial investigations and feasibility studies; evaluate design and construction performance; implement appropriate improvements expanding Regional contract support capacity; enhance contract cost controls; and ensure adequate training and administrative support for RPMs.

1989 Program

In 1989, the Agency is allocating a total of \$110,622,000 for the Response Support Program. The sample analysis and management activities conducted by the Contract Laboratory Program, the Environmental Services Divisions, and the states continue to be a primary component of the Response Support Program. By the end of 1989, the program's 96 sample analysis laboratories will have analyzed at least 120,000 samples, of which 46 percent will be for remedial projects, 29 percent for pre-remedial projects and 25 percent for removal actions. This program is also responsible for promulgation of the revisions to the NCP during 1989.

The program continues developing technologies and practices for preventing releases, identifying the causes of accidents, and preparing for the mitigation of chemical accidents. Knowledge gained from this effort is shared with state and local governments, trade associations, professional societies, industry, and the public sector. The Response Support Program ensures technical and management coordination within the Agency and with other Federal agencies, and provides oversight of remedial and removal activities through the Superfund Comprehensive Accomplishments Plan (SCAP). The SCAP is the central mechanism for planning, tracking and evaluating Superfund program activities. Support activities also include budget formulation, strategic planning, policy and program evaluation, program forecasting, financial accounting and tracking, and administrative services.

1988 Accomplishments

In 1988, the Agency obligated a total of \$109,879,800 from the Hazardous Substance Superfund appropriation. The objectives and goals of the Response Support Program were met through the expansion of field activities and quality assurance procedures for sample analysis and the revision of the NCP and HRS. Specifically, the laboratory support program conducted a total of 119,808 samples, of which 39,910 were special analytical samples and 79,898 were routine analytical samples. The revisions to the NCP provided procedures and standards for remedial actions consistent with SARA, clarified existing NCP language, reorganized the NCP to describe more accurately the sequence of response actions, and incorporated changes based on program experience since

the last revisions to the NCP. In addition, the Agency has improved project and information management, automated analytical data transmission from the contract laboratories, developed procedures and guidelines for program operations, provided direct technical support to the states, and developed new contracting mechanisms to ensure accelerated growth in site activities. CERCLIS was implemented and provides the Agency with direct access to site-related management data.

REMEDIAL SUPPORT

1990 Program Request

The Agency requests a total of \$137,330,100 for the Remedial Support Program for the Hazardous Substance Superfund appropriation. This represents an increase of \$1,965,200 over 1989. The majority of these resources support remedial contract management activities, technical assistance for remedial projects, and grants to states and local groups.

The Agency will proceed with the implementation of several management initiatives related to the Remedial Program. The program will continue to develop the diversified contracting strategy started in 1988 to enhance competition and strengthen Regional responsibility and involvement in contractor performance and evaluation. Initiatives to improve management of programs such as the Contractor Support Program will also receive support. Efforts to track site response progress will be enhanced as the program increases its reliance on the CERCLIS as an efficient and effective program management tool. The Agency will also continue to provide grants to local interest groups through the Technical Assistance Grants Program, administer Core Grants to the states, and monitor projects awaiting further remedial activity.

1989 Program

In 1989, the Agency is allocating a total of \$135,364,900 for this program from the Hazardous Substance Superfund Program. This program continues to emphasize rapid decision making and a bias for action. Superfund actions are being directed toward achieving and exceeding program targets. The program encourages a balanced approach to site work, and provides technical assistance to potentially responsible parties and states that assume responsibility for remedial activities. States and Indian tribes are being consulted throughout the project planning process as a primary means of ensuring an integrated and coordinated program effort. The Agency also continues to fund Multi-Site Cooperative Agreements.

The Agency is implementing the Alternative Remedial Contracts Strategy (ARCS). The purpose of ARCS is to obtain project management and technical services to support remedial response activities at NPL sites. The ARCS Program is based upon the concept of performance incentives. Quality of work performed on projects is directly related to the amount of future work received as well as the level of fee awarded to contractors. Approximately 40 contracts are being awarded during 1989.

1988 Accomplishments

In 1988, the Agency obligated \$56,943,100 from the Hazardous Substance Superfund Program. The ARCS Program was developed during 1988. ARCS contracts include two categories of functional activity: site specific technical support

and program management. The first category covers site specific project work that is tasked by work assignment. Program management includes contract management functions necessary to support multiple work assignments.

The Agency also provided support to the states through the Management Assistance Program. The goal of this program is to improve state administrative and financial programs. Training and outreach efforts have increased to support the growing number of cooperative agreements. Deficiencies in the hazardous waste disposal capacity assurances have been addressed and assistance has been given for correction of the problems. The Agency involved Federally recognized Indian tribes in hazardous waste management activities by expanding outreach efforts to this population through training on the Superfund Program.

In addition, the Agency developed the Superfund Memorandum of Agreement (SMOA) and the Core Program Cooperative Agreement (CPCA) to ensure substantial and meaningful involvement of states in the Superfund Program, as required by SARA. The SMOA is an agreement between a state or an Indian tribe and a Region that defines each party's roles and responsibilities in the implementation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended. This agreement provides maximum flexibility to EPA and the state/tribes in planning and implementing response activities, and clarifies EPA and state roles and expectations. The CPCA provides funds to conduct CERCLA activities not assigned to specific sites, but support a state's Response Program. Participation in this process enhances states' involvement in remedial activities and ensures that states have appropriate management systems for financial control of CERCLA funds.

REMOVAL SUPPORT

1990 Program Request

The Agency requests a total of \$74,244,000 for the Removal Support Program for the Hazardous Substance Superfund Appropriation. This represents an increase of \$5,215,000 from 1989. The majority of these resources are used to manage removal contracts which provide on-site technical services. Additional resources will support the emergency response operations of the Technical Action Team (TAT) and the Emergency Response Cleanup Services (ERCS) contracts, and an anticipated increase in the number of removal investigations.

In 1990, the Agency will continue to receive and screen hazardous substance release notifications to determine what, if any, response is required. These resources will provide policy direction and technical support for Removal activities including the review of waiver requests from statutory limitations. The program will remain in a steady state. No major changes in policy are expected.

1989 Program

In 1989, the Agency is allocating \$69,029,000 for the Removal Support Program from the Hazardous Response Superfund appropriation. These resources support 11,000 release notifications, 660 release investigations, and on-scene monitoring of hazardous substances at 150 sites. In addition, the regulatory and guidance framework are being completed for the Removal Program, including use of revised removal authorities and promulgation of final regulations on the notification, reportable quantities, and the designation of additional hazardous substances. The program establishes reportable quantity (RQ) levels

for extremely hazardous substances, publishes technical updates for some of the RQs that have been promulgated, and implements the rules currently being developed. In the vast majority of cases, the potentially responsible party or state or local government will take the lead in addressing the problem. In situations where more than one state is involved or where there is an unusually complex problem, the Federal government will coordinate and fund the response. EPA and the U.S. Coast Guard will continue to maintain an emergency response capability, including EPA's Environmental Response Team, comprised of Agency employees with special engineering and scientific expertise. This inter-agency relationship improves the Agency's ability to provide timely engineering and scientific advice to Federal, state, and local officials during hazardous substance response actions, and results in reliable and cost-effective solutions to existing and potential environmental threats.

1988 Accomplishments

In 1988, the Agency obligated \$62,783,200 to the Removal Response Program from the Hazardous Substance Superfund appropriation. These resources were used to conduct 700 release investigations, 8,992 release notifications, and on-scene monitoring of hazardous substances at 150 sites. This program provided administrative support personnel and training to assist OSCs in managing removal actions. The program continued to pursue a diversified contracting strategy, shifting contracting responsibilities to the Regions. The program awarded six new Regional ERCS contracts bringing the total number of contracts awarded to twelve. These awards increased the number of companies participating in the Removal Program.

SUPERFUND
Hazardous Substance Response - Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Hazardous Substance Response - OW					
Hazardous Substance Superfund	\$1,819.7	\$2,092.9	\$2,093.4	\$2,173.7	\$80.3
TOTAL	\$1,819.7	\$2,092.9	\$2,093.4	\$2,173.7	\$80.3
Hazardous Substance Response - OAR					
Hazardous Substance Superfund	\$2,178.5	\$1,916.3	\$1,915.3	\$3,102.2	\$1,186.9
TOTAL	\$2,178.5	\$1,916.3	\$1,915.3	\$3,102.2	\$1,186.9
TOTAL:					
Hazardous Substance Superfund	\$3,998.2	\$4,009.2	\$4,008.7	\$5,275.9	\$1,267.2
Hazardous Substance Response - Support					
TOTAL	\$3,998.2	\$4,009.2	\$4,008.7	\$5,275.9	\$1,267.2
PERMANENT WORKYEARS -----					
Hazardous Substance Response - OW	19.5	23.3	23.3	24.0	7
Hazardous Substance Response - OAR	19.8	17.1	17.1	20.5	3.4
TOTAL PERMANENT WORKYEARS	39.3	40.4	40.4	44.5	4.1
TOTAL WORKYEARS -----					
Hazardous Substance Response - OW	21.6	24.0	24.0	24.0	
Hazardous Substance Response - OAR	21.9	18.0	18.0	20.5	2.5
TOTAL WORKYEARS	43.5	42.0	42.0	44.5	2.5



SUPERFUND

Hazardous Substance Response - Support

Budget Request

The Agency requests a total of \$5,275,900 supported by 44.5 total workyears for 1990, an increase of \$1,267,200 and an increase of 2.5 total workyears from 1989. All of the request will be for the Hazardous Substance Superfund appropriation.

HAZARDOUS SUBSTANCE RESPONSE - OFFICE OF WATER

1990 Program Request

In 1990, the Agency requests a total of \$2,173,700 supported by 24.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$80,300 which reflects increased personnel and support costs.

The Agency will continue to analyze samples of untreated wastewaters, pretreated wastewaters, and pretreatment systems from ten Superfund sites that discharge to Publicly-Owned Treatment Works (POTWs); five additional sites will be sampled on an extended basis. Data from the samples will supplement and expand existing data to characterize untreated Superfund site wastewaters, the performance of on-site pretreatment systems, and the fate of pollutants in POTWs receiving these wastewaters. The program will continue its treatability studies of on-site pretreatment systems. In conjunction with ORD, the program will continue to update, refine and test the PC-based treatability model to be used by CERCLA site personnel, POTW operators and other pretreatment program personnel to predict the fate of pollutants in POTWs. This new data will be published in a final guidance manual.

Regions will continue to analyze the need for new or revised local limits at those facilities identified as receiving CERCLA wastewaters. Approximately 30 such facilities will require efforts in this activity. Regions will continue to review remedial action alternatives to ensure appropriate technology and water quality considerations have been addressed. Regions will continue to assess compliance where Superfund facilities have existing discharges to surface waters.

The Regions will continue to review response actions to ensure that applicable, relevant and appropriate drinking water standards are among the benchmarks that are applied. Where Maximum Contaminant Levels (MCLs) or Maximum Contaminant Level Goals (MCLGs) have not been established for a particular contaminant, the Regions will provide assistance with toxicological data. Once a site with a contaminated water supply has been selected for inclusion on the National Priority List (NPL), the Regions will participate in reviewing Remedial Investigations (RI), Feasibility Studies (FS), and in preparing Records of Decision (ROD). These studies select and document the response actions for contaminated water supplies and address the need to provide alternate water supplies.

The Regions, together with the states, will evaluate the effectiveness of drinking water remedial actions and will provide oversight of drinking water regulations to meet requirements under the Safe Drinking Water Act (SDWA).

1989 Program

In 1989, the Agency is allocating a total of \$2,093,400 supported by 24.0 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

During 1989, the Agency is continuing its efforts to characterize wastewater from Superfund sites. The Compatibility Analysis begun in 1987 is being updated, as three additional sites are sampled and analyzed to expand the data base on the treatment and characteristics of wastewater. In addition, analytical methods and Quality Assurance/Quality Control procedures are being developed as necessary.

Regions are continuing to review disposal alternatives and coordinate and develop discharge controls for an expanded list of Superfund sites. Additionally, they are participating in meetings to develop workplans for each NPL site. The need for new or revised local limits will be analyzed at approximately 50 facilities identified as receiving CERCLA wastewaters. Regions are continuing to review remedial action alternatives to ensure that they address water quality considerations. Compliance with imposed discharge conditions is being assessed at locations where Superfund facilities discharge into surface water.

The Regions are reviewing response actions to ensure that applicable, relevant and appropriate drinking water standards are applied. They are also participating in the review of RI/FSs and in the preparation of RODs which document the final cleanup actions of contaminated water supplies, particularly the need to provide alternate water supplies. Analytical information is being provided for the feasibility study process which compares the cost-effectiveness of remedial alternatives.

The Regions, together with the states, are evaluating the effectiveness of drinking water remedial actions and providing oversight of drinking water regulations to meet requirements under SDWA.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,819,700 supported by 21.6 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

During 1988, emphasis was placed on preparing guidance for the treatment of Superfund wastes discharged into POTWs. EPA continued a limited collection and analysis of technical information that characterizes wastewater from Superfund sites. The Compatibility Analysis done in 1987 to determine potential POTW interference levels for specific pollutants in wastewaters and sludges was updated with three additional site studies.

The Regional review of disposal alternatives and/or coordination and development of discharge controls was increased as response activities were undertaken by EPA for an expanded list of Superfund sites. Assistance was provided to POTWs for developing local limits and/or other control mechanisms where such facilities received Superfund wastewaters. Evaluations were

required for existing discharges to ensure that such wastewaters were in compliance with imposed discharge conditions.

Technical assistance was provided to state health officials on drinking water concerns. Assistance was given in characterizing both the relative health risk associated with the potential contamination of water supplies and the need for remedial action.

HAZARDOUS SUBSTANCE RESPONSE - OFFICE OF AIR AND RADIATION

1990 Program Request

The Agency requests a total of \$3,102,200 supported by 20.5 total workyears. This represents increases of \$1,186,900 and 2.5 total workyears from 1989. The increases will provide support for the development of interim Applicable or Relevant and Appropriate Requirements (ARARS) for radium/thorium/uranium contaminated sites; the continuation of the Volume Reduction/Chemical Extraction (VORCE) pilot project; the collection, analysis, and reporting of potentially radioactive samples, and site discovery development. As part of the VORCE project, the Agency will construct a treatability pilot plant at the Glen Ridge/Montclair site and complete soilwash and chemical extractions at Ottawa, Illinois.

In 1990 the program will also continue to provide technical support for addressing air quality problems associated with hazardous waste site clean-up activities. This support includes the use of air quality models to determine risks posed by air emissions from clean-up activities, and establishment of temporary air monitoring networks around selected sites. The program will evaluate potential disposal techniques and technology, and review remedial action plans prior to implementation.

1989 Program

In 1989 The Agency is allocating \$1,915,300 supported by 18.0 workyears to complete the design of the Glen Ridge/Montclair pilot plant and initiate evaluation of treatment technologies for mixed wastes. The EPA radiation laboratories are analyzing each quarter a minimum of 700 samples that may be radioactive. The Agency is also providing other technical support, including air quality modeling and monitoring, for site clean-up activities. The program is continuing to help assure that site decisions involving air pollution and radiation contamination issues are consistent with air and radiation program policies and regulations.

1988 Accomplishments

In 1988 the Agency obligated \$2,178,500 supported by 21.9 total workyears for this program. The program continued to provide training of Regional staff and development of technical data and guidance to determine the air and radiation impacts and remedial measures for Superfund sites. The radiation laboratories continued to provide sample analysis.



SUPERFUND
Hazardous Substance Response - Interagency

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Interagency Superfund
Department of Health &
Human Services (ATSDR)
Hazardous Substance
Superfund

	\$42,999.9	\$44,500.0	\$44,500.0	\$44,500.0	
TOTAL	\$42,999.9	\$44,500.0	\$44,500.0	\$44,500.0	

Interagency Superfund
Department of Health &
Human Services (NIEHS)
Hazardous Substance
Superfund

	\$28,915.0	\$21,915.0	\$21,915.0	\$21,915.0	
TOTAL	\$28,915.0	\$21,915.0	\$21,915.0	\$21,915.0	

Interagency Superfund
United States Coast
Guard
Hazardous Substance
Superfund

	\$3,027.6	\$4,948.2	\$4,948.2	\$4,948.2	
TOTAL	\$3,027.6	\$4,948.2	\$4,948.2	\$4,948.2	

Interagency Superfund
Department of Justice
Hazardous Substance
Superfund

	\$16,373.0	\$16,700.0	\$16,700.0	\$19,200.0	\$2,500.0
TOTAL	\$16,373.0	\$16,700.0	\$16,700.0	\$19,200.0	\$2,500.0

Interagency Superfund
Federal Emergency
Management Agency
Hazardous Substance
Superfund

		\$1,879.6	\$1,879.6	\$1,879.6	
TOTAL		\$1,879.6	\$1,879.6	\$1,879.6	

Interagency Superfund
FEMA-Relocation
Hazardous Substance
Superfund

	\$2,784.0				
TOTAL	\$2,784.0				

SUPERFUND
Hazardous Substance Response - Interagency

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
Interagency Superfund National Oceanic & Atmospheric Administration Hazardous Substance Superfund	\$2,429.4	\$2,280.1	\$2,280.1	\$2,280.1		
TOTAL	\$2,429.4	\$2,280.1	\$2,280.1	\$2,280.1		
Interagency Superfund Department of the Interior Hazardous Substance Superfund	\$1,113.5	\$1,253.5	\$1,253.5	\$1,253.5		
TOTAL	\$1,113.5	\$1,253.5	\$1,253.5	\$1,253.5		
Interagency Superfund Occupational Safety & Health Administration Hazardous Substance Superfund	\$380.9	\$1,008.2	\$1,008.2	\$1,008.2		
TOTAL	\$380.9	\$1,008.2	\$1,008.2	\$1,008.2		
TOTAL: Hazardous Substance Superfund	\$98,023.3	\$94,484.6	\$94,484.6	\$96,984.6	\$2,500.0	
Hazardous Substance Response - Interagency	TOTAL	\$98,023.3	\$94,484.6	\$94,484.6	\$96,984.6	\$2,500.0

SUPERFUND

Hazardous Substance Response - Interagency

Budget Request

The Agency requests a total of \$96,984,600 for the Hazardous Substance Superfund appropriation for Interagency activities in 1990, an increase of \$2,500,000 from 1989. The increase will be used for the Department of Justice. The requested funding will also finance the on-going Superfund program activities of the Department of Health and Human Services, United States Coast Guard, the National Oceanic and Atmospheric Administration, the Department of the Interior, the Federal Emergency Management Agency, and the Occupational Safety and Health Administration. These agencies and offices request workyears in their own budget requests.

DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)

1990 Program Request

The Agency requests a total of \$66,415,000 (\$44,500,000 for the Agency for Toxic Substances and Disease Registry (ATSDR) and \$21,915,000 for the National Institute for Environmental Health Sciences (NIEHS)) from the Hazardous Substance Superfund appropriation for this program. This request represents no increase over 1989 levels.

In 1990, ATSDR will continue to provide technical support and expertise as required under the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA), as amended, to protect public health and worker safety, and to determine the toxicological and human health impacts associated with hazardous substances. Emphasis will be placed on expanding state responsibilities and involvement along with continuing efforts in the areas of health assessments, toxicological profiles and registries, and health research.

In 1990, NIEHS will continue to provide for basic research and advanced or graduate level training to increase the scientific understanding of the relationships between exposure to hazardous substances and human health and the environment. Four University-based grant projects inaugurated in 1987 will be expanded to a total of 40 projects and six support core projects. These grants include basic biomedical research studies and each will investigate new and unique methodologies to measure exposure levels and the effects of exposure in humans. Seventeen of the projects involve research in engineering, 13 are hydrogeological in content, and six are ecologically oriented. The intent is to award additional program grants to institutions with coordinated, multicomponent, and interdisciplinary programs in the environmental and allied sciences.

1989 Program

In 1989, the Agency is allocating a total of \$66,415,000 (\$44,500,000 for ATSDR and \$21,915,000 for NIEHS) from the Hazardous Substance Superfund appropriation to this program.

In 1989, ATSDR is overseeing an estimated 1,100 health assessments. These health assessments are being carried out at National Priorities List (NPL) sites, state non-NPL sites, and in response to citizens' petitions. ATSDR continues to enhance and maintain toxicology data bases for chemicals generally found at Superfund sites or encountered in emergency situations. In addition, ATSDR provides health assistance support for emergency responses in the form of an estimated 1,000 health consultations. Through this process, ATSDR is expanding state roles for routine concerns and/or on site consultations when necessary. The listing of 100 additional toxic substances, required by the Superfund Amendments and Reauthorization Act of 1986 (SARA), was published in the Federal Register on October 20, 1988. ATSDR continues to maintain a national registry of serious diseases and illnesses and of persons exposed to toxic substances. This activity includes maintenance of current registries as well as initiating and collecting data for seven new subregistries.

Further, ATSDR continues the implementation and refinement of the ATSDR health research plan, including coordination of the plan with EPA and the National Institute of Environmental Health Sciences. ATSDR is implementing studies on birth defects and developmental disabilities. In addition, the Dioxin Morbidity study is scheduled to be completed. The research agenda goal to determine the levels of exposure that pose a significant threat to human health is being finalized for 50 hazardous substances and proposed for an additional 58. ATSDR provides support and technical assistance to the health community by maintenance of automated directories and information systems such as the Environmental Health Information Resources Directory. A second listing of at least 100 additional substances is scheduled to be completed, as required, by the end of 1989.

In 1989, NIEHS is proceeding with the training of workers, such as laborers, emergency responders, hazardous materials transporters, and supervisors who are, or may be, engaged in activities related to hazardous substance removal and containment. The eleven grants awarded in 1987 to train workers and supervisors are being monitored for their efficiency and effectiveness. Five of these grants targeted specific categories of workers on a nationwide basis and six were aimed at consortiums of universities, state and local agencies, or other non-profit organizations. Results from basic research programs are issued annually by NIEHS at meetings of the Advisory Committee on Hazardous Substances Research and Training. These meetings are attended by representatives of private industry, government (Federal, state, and local), and academia. Reports of research findings are also published in peer-reviewed scientific journals. NIEHS continues to work in conjunction with the National Institute of Occupational Safety and Health to provide short courses and continuing education to state and local officials.

1988 Accomplishments

In 1988, \$71,914,900 was obligated from the Hazardous Substance Superfund appropriation by HHS (\$42,999,900 for ATSDR and \$28,915,000 for NIEHS).

These resources enabled ATSDR to identify and rank the first 100 most hazardous substances as required by CERCLA. The listing was published in the Federal Register on April 17, 1987. Toxicological profiles for the first 25 substances are in final preparation. The second set of 25 profiles are in preparation for release for public review and comment next month. Profiles are being developed at a rate of at least 25 per year. ATSDR is required to conduct health assessments for all sites on the National Priorities List. As of September 30, 1988, health assessments have been completed on 560 NPL sites.

In 1988, NIEHS received supplemental applications from the four universities that were awarded grants in 1987 to support programs of basic biomedical research into the effects of hazardous substances on human health. Each of these institutions has developed independent research projects that are well integrated into the overall program. In addition, curricula has been developed and pilot tested from the eleven grants awarded in 1987 that support worker training and education. The curricula included initial and refresher training courses in the management of hazardous substance-related emergencies and long term responses by Federal, state, and local governments.

UNITED STATES COAST GUARD (USCG)

1990 Program Request

The Agency requests a total of \$4,948,200 for the Hazardous Substance Superfund appropriation for the USCG. This request represents no increase over 1989 levels.

In 1990, the USCG will continue to conduct removals and monitor non-Federally funded removals in coastal areas. The USCG will proceed with its efforts to reduce the occurrence and effects of releases of hazardous substances by enforcing applicable sections of CERCLA, as amended. This will encompass activities such as: issuing and checking Certificates of Financial Responsibility; investigating spill reports; and determining potentially responsible parties (PRPs) for penalty and liability assessment. The USCG continues to provide an adequately equipped and properly trained workforce to investigate releases of hazardous substances, and to monitor removal actions. The USCG will continue to provide a central point for receiving reports of releases of hazardous substances and for notifying the predesignated Federal on-scene coordinator and other appropriate governmental and/or private entities.

1989 Program

In 1989, the Agency is allocating a total of \$4,948,200 from the Hazardous Substance Superfund appropriation for this program.

The USCG maintains the medical monitoring system to minimize the possibility of any physical impairment or harmful effects to USCG enforcement or response personnel from exposure to hazardous substances. The Coast Guard maintains information systems for program management analysis and the necessary chemical assessment data systems. An estimated 80 new chemicals are being added to the Chemical Hazards Response Information System. USCG establishes policies, plans, and training that aid on-scene coordinators in successfully dealing with Superfund incidents.

1988 Accomplishments

In 1988, \$3,027,600 was obligated from the Hazardous Substances Superfund appropriation for USCG. These resources maintained safety equipment, conducted response training for USCG personnel, upgraded the capabilities of the National Response Center, and provided field data systems to support response programs and minimize the possibility of harm to personnel from exposure to hazardous substances.

DEPARTMENT OF JUSTICE (DOJ)

1990 Program Request

The Agency requests a total of \$19,200,000 for the Hazardous Substance Superfund appropriation. This request represents an increase of \$2,500,000 for DOJ's expanded Superfund caseload and the operation of a system which provides automated data support for complex cases.

In 1990, DOJ will increase its support to EPA in reviewing negotiated consent decrees, de minimis settlements, enforcement of information requests, and an expanded docket of access cases. Civil penalties will be imposed in instances where PRPs violate notification requirements, deny access to sites, destroy records, violate financial responsibility regulations, or violate administrative and judicial settlement agreements. Criminal cases will be pursued and continued support will be provided to EPA's expanded cost recovery efforts. DOJ will also defend the Agency against citizen suits, pre-enforcement review cases, reimbursement claims, and challenges to EPA administrative civil penalty decisions.

1989 Program

In 1989, the Agency is allocating a total of \$16,700,000 from the Hazardous Substance Superfund appropriation for this program. DOJ is providing civil and criminal enforcement litigation which includes: counseling on and enforcing administrative orders; issuing warrants for entry; and instituting suits to compel removal and remedial actions and to recover response costs incurred by the Fund.

1988 Accomplishments

In 1988, \$16,373,000 was obligated from the Hazardous Substance Superfund appropriation by DOJ. These resources were used for litigation and other enforcement related activities. Key accomplishments included the filing of 29 settlement/injunctive (CERCLA Section 106) cases and 49 cost recovery (CERCLA Section 107) cases. In addition to the cases filed, DOJ supported 42 Section 106 and 116 Section 107 on-going cases filed prior to 1988. DOJ also concluded 18 Section 106 cases and 20 Section 107 cases by consent decrees.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

1990 Program Request

The Agency requests a total of \$1,879,600 for the Hazardous Substance Superfund appropriation for FEMA. This request represents no increase over 1989 levels.

Funds will be used to maintain local, state, and Federal emergency preparedness and administrative support. Resources will continue to fund the distribution of educational materials at state and local levels, and to support the training and team building necessary to enhance specialized response capabilities.

1989 Program

In 1989, the Agency is allocating a total of \$1,879,600 from the Hazardous Substance Superfund appropriation. FEMA is conducting permanent and temporary relocation operations, providing general administrative support, and revising relocation manuals and regulations as required. An additional coordinator has been placed in one of the Regions to provide technical assistance to EPA and the states. FEMA provides support management and coordination of training programs for local officials through the Emergency Management Institute and the National Fire Academy. Additional emphasis is being placed on delivery of the Hazards Analysis course in the field and at Emmitsburg, Maryland, and also on training by the Emergencies Management Institute. FEMA also provides technical assistance to state and local governments through improved coordination with the Regional Response Teams (RRT). The RRT are involved in all preparedness activities, including contingency plan review, training support, planning support for four Regional workshops, and exercise evaluations.

1988 Accomplishments

In 1988, \$2,784,000 was obligated from the Hazardous Substance Superfund by FEMA, of which \$1,130,000 supported temporary and permanent relocation. Other resources were used to: (1) support FEMA's development of relocation guidelines and regulations; (2) provide management oversight for temporary and permanent relocations; (3) provide preparedness guidance and technical assistance to state and local governments; (4) maintain the FEMA/Department Of Transportation information exchange system; (5) enhance coordination of hazardous materials issues with the public and private sector; (6) provide continued support for National and Regional Response Teams (NRT/RRT) initiatives; and (7) support the FEMA/EPA instructor exchange program. FEMA also enhanced Knowledge, Skill, and Abilities standards for instructors and continued to deliver existing training systems at the state and local levels.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

1990 Program Request

The Agency requests a total of \$2,280,100 for the Hazardous Substance Superfund appropriation for NOAA. This request represents no increase over 1989 levels.

These resources will allow NOAA to continue its efforts to support: (1) Federal on-scene coordinators' use of advanced emergency information technology for response actions; (2) coastal resource coordination and hazardous waste remedial support activities that ensure full compliance with CERCLA; and (3) RRT contingency planning efforts.

1989 Program

In 1989, the Agency is allocating \$2,280,100 from the Hazardous Substance Superfund appropriation for NOAA. These resources are supporting NOAA's efforts to provide technical assistance to Federal on-scene coordinators for releases of hazardous substances in coastal and marine areas. NOAA continues to maintain the enhanced computer-based information CAMEO program which combines meteorological and chemical-specific analytical data for emergency response activities. In addition, NOAA furnishes technical support to EPA during removal actions and evaluates the impact from releases of hazardous substances on natural resources. It also acts as a technical liaison with EPA

and other Federal, state, and local agencies on coastal resource issues of common interest. Other services provided by NOAA are: technical support for activities associated with hazardous waste site removal and remedial actions affecting coastal and marine resources; and policy support to the NRT/RRT and to state and local entities in the areas of contingency planning, community relations, communications, preparedness evaluation, and training.

1988 Accomplishments

In 1988, \$2,429,400 was obligated from the Hazardous Substance Superfund appropriation by NOAA. These resources were used to support training for the scientific response team, to purchase and maintain protective equipment for personnel, and to maintain field instrumentation. Funds were also used to establish an Environmental Compliance Division in the Office of the Assistant Secretary for Administration to develop policies and procedures to meet the pollution control and mitigation requirements of CERCLA and related environmental laws.

DEPARTMENT OF THE INTERIOR (DOI)

1990 Program Request

The Agency requests a total of \$1,253,500 for the Hazardous Substance Superfund appropriation for DOI. This request represents no increase over 1989 levels. These resources will be used to support DOI's core program in response management and preparedness, and damage assessment capability.

1989 Program

In 1989, the Agency is allocating a total of \$1,253,500 from the Hazardous Substance Superfund appropriation for this program. DOI continues to participate in NRT/RRT preparedness and training activities and to provide direction, guidance, and coordination of scientific and natural resource expertise in response to releases of hazardous substances at Superfund sites. DOI is pursuing its efforts to provide guidance, consultation, technical assistance, and training to state and local governments on emergency preparedness, response planning, and the implementation of response actions. These efforts will be necessary to ensure that proper consideration is given to natural resources in response activities. DOI also provides technical assistance and review for damage assessments conducted by states and others to ensure that natural resource losses can be compensated where eligible.

1988 Accomplishments

In 1988, \$1,113,500 was obligated from the Hazardous Substance Superfund by DOI. These resources enabled DOI to participate in NRT/RRT preparedness and training activities and to initiate its involvement in state and local emergency preparedness and technical assistance to trustees of natural resources.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

1990 Program Request

The Agency requests a total of \$1,008,200 for the Hazardous Substance Superfund appropriation for OSHA. This request represents no increase over 1989 levels. The resources will allow OSHA to support technical assistance at hazardous waste sites, worker safety inspections and enforcement at sites where Superfund remedial actions are underway, and assistance to the NRT/RRT in preparedness and training activities. Resources will be redirected from inspections/enforcement to the areas of technical assistance, standards development, and NRT/RRT support to provide EPA with a more balanced program.

1989 Program

In 1989, the Agency is allocating a total of \$1,008,200 from the Hazardous Substance Superfund appropriation. Funds are being used to: conduct audits and evaluations of safety plans, health plans, and work practices at Superfund sites; provide sampling and laboratory analysis of hazards located at approximately 100 sites to determine proper personnel protective equipment; and provide technical assistance on worker safety and health issues, such as revising the Hazardous Waste Referral Manual. OSHA conducts Federal inspections at approximately 90 hazardous waste sites, including inspection of the purchase and use of protective sampling and communications equipment for personnel working at Superfund sites. OSHA also provides grants for a state inspection program of approximately 50 non-Federally inspected Superfund sites. Funds are also applied to: support information sharing activities; assist in review and development of contingency plans; participate in simulation exercises; and assist in training activities. OSHA uses resources to develop required standards for certification of training for employees engaged in hazardous waste operations.

1988 Accomplishments

In 1988, \$380,900 was obligated from the Hazardous Substance Superfund appropriation by OSHA. These funds were used to train OSHA inspectors, maintain a special inspection program for Superfund sites, provide technical assistance to EPA, provide support for the activities of the NRT/RRT, and develop a required worker protection standard.



Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	14-1
ENFORCEMENT	
Hazardous Substance Response - Enforcement.	14-47
Hazardous Substance Technical Support - Office of Enforcementnt and Compliance Monitoring.	14-49
Hazardous Substance Technical Enforcement.	14-51
Hazardous Substance Legal Enforcement.	14-53
Hazardous Substance Criminal Investigations.	14-56



SUPERFUND
Hazardous Substance Response-Enforcement

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	

(DOLLARS IN THOUSANDS)						
PROGRAM						

Hazardous Substance Technical Support - Office of Enforcement And Compliance Monitoring						
Hazardous Substance Superfund	\$8,595.1	\$8,739.0	\$8,739.0	\$10,475.1	\$1,736.1	
TOTAL	\$8,595.1	\$8,739.0	\$8,739.0	\$10,475.1	\$1,736.1	
Hazardous Substance Technical Enforcement						
Hazardous Substance Superfund	\$84,535.2	\$108,532.2	\$92,804.3	\$96,776.1	\$3,971.8	
TOTAL	\$84,535.2	\$108,532.2	\$92,804.3	\$96,776.1	\$3,971.8	
Hazardous Substance Legal Enforcement						
Hazardous Substance Superfund	\$11,583.9	\$13,685.3	\$13,672.8	\$14,865.6	\$1,192.8	
TOTAL	\$11,583.9	\$13,685.3	\$13,672.8	\$14,865.6	\$1,192.8	
Hazardous Substance Criminal Investigations						
Hazardous Substance Superfund	\$1,378.5	\$1,592.9	\$1,592.9	\$1,592.9		
TOTAL	\$1,378.5	\$1,592.9	\$1,592.9	\$1,592.9		
TOTAL:						
Hazardous Substance Superfund	\$106,092.7	\$132,549.4	\$116,809.0	\$123,709.7	\$6,900.7	
Hazardous Substance Response-Enforcement	TOTAL	\$106,092.7	\$132,549.4	\$116,809.0	\$123,709.7	\$6,900.7

SUPERFUND
Hazardous Substance Response-Enforcement

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PERMANENT WORKYEARS -----					
Hazardous Substance Technical Support - Office of Enforcement And Compliance Monitoring	37.9	45.5	45.5	45.5	
Hazardous Substance Technical Enforcement	594.0	706.2	613.5	735.9	122.4
Hazardous Substance Legal Enforcement	197.9	263.1	262.8	280.5	17.7
Hazardous Substance Criminal Investigations	19.8	17.3	17.3	17.3	
TOTAL PERMANENT WORKYEARS	849.6	1,032.1	939.1	1,079.2	140.1
TOTAL WORKYEARS -----					
Hazardous Substance Technical Support - Office of Enforcement And Compliance Monitoring	40.4	45.5	45.5	45.5	
Hazardous Substance Technical Enforcement	640.5	744.4	651.7	735.9	84.2
Hazardous Substance Legal Enforcement	227.4	277.5	277.2	280.5	3.3
Hazardous Substance Criminal Investigations	20.1	17.3	17.3	17.3	
TOTAL WORKYEARS	928.4	1,084.7	991.7	1,079.2	87.5

SUPERFUND

Hazardous Substance Response - Enforcement

Budget Request

The Agency requests a total of \$123,709,700 supported by 1,079.2 total workyears for 1990 for the Hazardous Substance Superfund appropriation for technical, administrative, and legal enforcement activities. This represents an increase of \$6,900,700 and 87.5 total workyears from 1989. The increase reflects expanded efforts to execute interagency agreements with other Federal agencies to remediate sites owned or operated by those agencies, to secure potentially responsible party (PRP) site remediation and to pursue recovery of Federal and state costs from responsible parties.

HAZARDOUS SUBSTANCE TECHNICAL SUPPORT

1990 Program Request

The Agency requests a total of \$10,475,100 supported by 45.5 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This \$1,736,100 increase from 1989 will support expanded evidence audit activities and cover increases in personnel and support costs. There is no change in total workyears.

In 1990, the National Enforcement Investigations Center (NEIC) will continue to provide its full range of support services, which were expanded in 1988 in response to the demands of SARA. Areas of continuing emphasis will include:

- o Responsible Party Searches - The substantial increase in emphasis on negotiation will make early comprehensive searches much more important. NEIC provides a major resource to the Regions in automated data base analysis for corporate histories and chains of ownership.
- o Nonbinding Preliminary Allocations of Responsibility and De Minimis Settlements - These two new areas will use NEIC's unique information retrieval systems and technical analysis skills to assess the source and character of hazardous wastes involved in the allocation process and to support complex settlements involving de minimis parties.
- o Section 106 and 107 Judicial Actions - NEIC will continue to provide analytical expertise in developing judicial cases and supporting complex expert testimony needs through to completion. Increased evidence audit support will assure ready access to records relating to particular sites, so that accurate citations can be ensured as the number of actions being prepared for litigation for remedy or cost recovery increases.
- o Criminal Referrals Under Section 103 - These areas will continue to be emphasized as a result of the significant increase in criminal enforcement authorities.

- o Negotiation for Response at Federal Facility Sites - NEIC will support the increased emphasis on negotiating agreements with other Federal agencies for response actions at sites owned or operated by those agencies.

This program will also continue to conduct field investigations in support of case development, provide laboratory analysis (including ground-water sample analysis), provide technical testimony, negotiate technical aspects of key consent decrees, ensure evidence audit quality control, and provide for the safe disposal of hazardous waste material gathered during criminal investigation.

1989 Program

In 1989, the Agency is allocating a total of \$8,739,000 supported by 45.5 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

As a result of Superfund reauthorization, the technical support program at NEIC is responding to a growing demand for services. This is due primarily to three factors: growth in the size of the National Priority List (NPL) which increases demand for the special environmental monitoring work at which NEIC is expert; growth in levels of enforcement-related activities in areas which have historically demanded NEIC support; and the introduction of several new areas of responsibility which NEIC is particularly well qualified to handle. These include work related to non-binding preliminary allocations of responsibility, de minimis settlements, and Federal facility sites. In addition, laboratory and technical support work due to changes in the criminal provisions of the statute will see expanded activity. Evidence audit control processes are being continued to ensure effective preparation for litigation.

In areas of special sensitivity, such as criminal case management or Federal facility enforcement, NEIC is able to provide high caliber staff expertise without the risk of conflict of interest which might be inherent in the use of contractor staff. The NEIC also protects the Agency's interests by continuing to audit contract laboratories.

1988 Accomplishments

In 1988, the Agency obligated a total of \$8,595,100 supported by 40.4 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

In 1988, NEIC supported new and ongoing civil and criminal judicial enforcement actions, handled requests for computerized information system searches for data relating to responsible parties and sites, conducted quality assurance inspections at contract laboratories, and participated in several major environmental assessment projects. Major laboratory support was provided to the Regions and Headquarters for analysis of hazardous waste samples. In addition, NEIC has supported evidence audit and computerized file development projects as well as training, placement and oversight of contractor evidence audit personnel in each Region. NEIC continued to provide extensive technical assistance to EPA and state laboratories in the following areas: analytical procedures; preparation and handling of high hazard samples; disposal of hazardous laboratory wastes; shipping and safety procedures; protection and restoration plans; and site investigations and safety procedures. The NEIC also continued its in-depth studies of chemical hazards to laboratory and field personnel engaged in hazardous waste investigations.

HAZARDOUS SUBSTANCE TECHNICAL ENFORCEMENT

1990 Program Request

The Agency requests a total of \$96,776,100 supported by 735.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This reflects an increase of \$3,971,800 and 84.2 total workyears to support an increased number of negotiations at Federal Facilities for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120 interagency agreements, increased support for state-lead enforcement, and a focus on remedial design/remedial actions negotiations to achieve potentially responsible parties (PRPs) response.

The largest area of growth in the program is the Federal Facility program. It is estimated that over 200 Federal Facilities will be on the final National Priorities List (NPL) or in the scoring pipeline in 1990. All of these facilities will require Section 120 Interagency Agreements (IAGs). IAGs are enforceable agreements for conducting remedial investigation/feasibility study (RI/FS) and remedial actions requiring significant participation by a state, EPA, and, primarily, the other Federal agency. Given the size and complexity of many Federal facilities and the Agency's experience in the hazardous waste field, EPA's role is crucial to the long-term remediation of these facilities.

The Technical Enforcement effort in 1990 will focus on providing the administrative and judicial support to ensure PRP response actions, and on managing an expanding remedial enforcement pipeline of sites already underway. This will be the first year that the number of PRP first remedial starts exceed EPA fund-financed starts. This reflects the Agency's success in negotiating for greater involvement of PRPs in the remedial process. The enforcement program will oversee PRP conduct of the engineering phase of the process the RI/FS, and will negotiate Consent Decrees for the remedial design and remedial action phases which include explicit project milestones as well as provisions for collection of stipulated penalties and dispute resolution in case the PRP fail to meet their commitments.

The program will encourage settlements with PRPs through the use of de minimis and mixed funding settlements. Where settlements are not achieved, the program will swiftly pursue litigation for injunctive relief. Particular attention will be given to non-settlers in mixed funding situations. Another area of major emphasis of the Technical Enforcement program will be an aggressive cost recovery effort. The Agency will be increasing enforcement activity for litigation and settlement of cases to recover Trust Fund expenditures at sites where Fund-financed remedial response has occurred.

The program will build on legal precedent and negotiation experience to design more effective strategies for securing PRP response. Guidance documents will be revised to improve settlement incentive strategies, PRP oversight policies, and state enforcement policies. In addition, guidance on state-Federal cooperative agreements will be completed. More effective use will be made of integrated information systems to better plan negotiation and litigation strategy. The Agency will provide support to states to assist them with state enforcement actions at NPL sites and to ensure that site deletion from the NPL is in accordance with the National Contingency Plan (NCP). In addition, the program will target support to a small number of criminal enforcement actions designed to deter deliberate violations of the law, particularly in such critical areas as records management and release reporting.

1989 Program

In 1989, the Agency is allocating a total of \$92,804,300 supported by 651.7 total workyears, all of which is from the Hazardous Substance Superfund appropriation, to secure and oversee responsible party response actions at NPL and other priority sites and to pursue cost recovery actions.

EPA has responsibility for selecting site remedies for the PRP-financed studies. Procedures for maintaining the administrative record have been developed to ensure that the remedy selected at these sites is consistent with the NCP.

As the RI/FS process draws to a conclusion, negotiations with PRPs for implementation of the remedy are vigorously pursued. De minimis and mixed funding settlements figure prominently as incentives for settlement, coupled with aggressive pursuit of non-settlers. In cases where a settlement is not reached, the Agency is pursuing litigation to compel PRPs to undertake remedial design and remedial action. The Agency is also making effective use of unilateral administrative orders and their commensurate treble damages to compel PRP response.

In addition to selecting site remedies and negotiating with PRPs, the program is ensuring compliance by PRPs with agreed upon response activities at sites where a settlement has been reached and work is underway. Additional enforcement action will be taken when required, assessing stipulated penalties or conducting alternative dispute resolution at those sites where the PRPs fall out of compliance with the order or consent decree. Oversight costs will be included in Response Agreements at all PRP-financed sites.

Where Fund-financed action has been undertaken, the program is pursuing administrative or judicial cost recovery actions. The growth in the cost recovery program is in the area of remedial cost recovery as Fund-financed actions are completed. Cost recovery action will be pursued against non-settlers, which increases the risk for PRPs. Civil investigators are being hired to develop evidence to support enforcement action against recalcitrants, in litigation, settlements, and in cost recovery cases.

The program plans to enter into Federal Facility IAGs as well as continue oversight of ongoing Federal Facility responses. EPA must review and concur on the selection of remedy at Federal Facilities. Early involvement by EPA at the RI/FS stage prevents delays in the approval of the Record of Decision. EPA must ensure public participation; EPA also ensures state involvement in the process. In addition to those sites where IAGs are planned, the Agency is working with other Federal agencies where remedial studies are underway.

1988 Accomplishments

In 1988, the Agency obligated \$84,535,200 and used 640.5 total workyears, all of which was from the Hazardous Substance Superfund appropriation.

Major efforts were initiated to implement the provisions of SARA. The Agency completed: 1) the Enforcement guidance for implementing the revised NCP; 2) the national Cost Recovery Strategy; 3) de minimis and mixed funding guidance; and 4) the state enforcement strategy. These strategies will encourage PRP settlements and provide more definitive guidance to the states so

that they can effectively use their state authorities to compel PRP response. In addition to these guidance documents and strategies, the Agency took steps to improve the management and information systems that monitor and evaluate programmatic achievements.

This was an important year for PRP response actions as a result of continued enforcement efforts. PRPs are taking an increasingly active role in site response. PRPs conducted, and the Agency provided oversight of, approximately half of the RI/FS initiated in 1988. The program also concluded RD/RA negotiations at NPL sites and referred settlement cases to the Department of Justice (DOJ) for entering in the courts. Mixed funding agreements and de minimis authorities have provided incentives to settlement. In addition, the program ensured that negotiated removal actions conducted by PRPs met Agency standards.

The Federal Facility Task Force developed policy and implementation procedures for Section 120 provisions of SARA. The Task Force also distributed boiler plate agreements negotiated with the Department of Defense and Department of Energy for Regional use at sites owned or operated by these agencies.

The Agency continued cost recovery efforts, referring both remedial and removal cases to DOJ. The Agency recovered \$55.6 million in 1988, exceeding Agency estimates by 6 percent. This was triple the dollars recovered in 1987. Program-to-date, the Agency has collected almost \$105 million. There also was a substantial administrative caseload for cost recovery, including cases under the new arbitration regulations.

HAZARDOUS SUBSTANCE LEGAL ENFORCEMENT

1990 Program Request

The Agency requests a total of \$14,865,600 supported by 280.5 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$1,192,800 and an increase of 3.3 total workyears from 1989. This increase reflects not only the cost of the added workyears but also increased personnel and support costs. The increase in workyears reflects greater legal support to ongoing civil judicial cases, particularly for cost recovery actions.

Federal legal enforcement work will continue to fall into two major categories: (1) actions to secure privately-financed site cleanups and (2) "cost recovery" actions to recoup Hazardous Substance Trust Fund dollars actually expended in Fund-financed cleanups. Aggressive enforcement actions to secure privately-financed cleanups will be a high priority. These actions will allow the Agency to focus Fund resources on abandoned sites or sites with insolvent responsible parties where direct use of the Fund presents the only available response option. "Cost Recovery" actions return monies to the Trust Fund and permit the Agency to address a larger number of sites.

Headquarters staff will continue to serve in two distinct but related capacities. The first is the development of national policy and guidance on issues which require clarification and resolution to ensure a nationally uniform approach. Continued implementation of SARA by the program office will require development of policy and guidance to address new issues as they arise. In addition, policies developed early in the CERCLA program and those

developed soon after SARA was enacted were, of necessity, general in nature, and will need major revisions based on case-specific applications. Finally, revised guidance will often be necessary to incorporate lessons learned during management reviews of overall program performance.

The second Headquarters role is that of litigation support. Although the trend in CERCLA will be to decrease Headquarters participation in routine litigation management, this objective will be counterbalanced by the anticipated growth in the number of precedent-setting actions expected to be litigated in 1990. Two important criteria for Headquarters involvement will be the need for special subject-matter expertise that has been developed in Headquarters, and case-by-case assistance on specialized, complex or resource intensive lawsuits as requested by the Regions. Headquarters staff will also provide a focal point for exchange of ideas and strategies useful for particularly complex cases or in cases where responsible parties are particularly recalcitrant. Headquarters will be particularly active in case development for Section 106 actions, in serving as the EPA lead for developing amicus briefs for a growing number of private contribution suits which can set important legal precedents affecting Federal enforcement, and in such relatively new areas as enforcement of information requests.

Headquarters staff will continue to provide technical assistance and training for new regional and state personnel and on-site technical assistance as new issues surface. Here the clearinghouse services of Headquarters will be extremely useful in getting information out to all parties.

Regional legal enforcement will continue to reflect the emphasis of SARA on negotiation with potentially responsible parties (PRPs), mandatory schedules for dealing with sites on the National Priorities List (NPL), substantial public participation, and the introduction of new enforcement remedies. These emphases require a dramatic expansion in regional legal enforcement work in 1989, which is expected to continue in 1990. Areas of intense regional legal effort required or emphasized by the new legislation will continue to include the following:

- o Records of Decision (RODs) and the supporting administrative records must be able to withstand court scrutiny when PRPs challenge responsibility to conduct remedial action and/or respond to cost recovery claims. Strong legal support is needed to ensure that these RODs are legally sufficient and supported by adequate documentation.
- o De Minimis Settlements require legal involvement to ensure that they are appropriately handled, particularly with respect to subsequent negotiations.
- o Consent Decrees are now required to codify successful completion of negotiations with PRP's to conduct a remedial action. This process can be more complex than the former alternative of administrative resolution.
- o Administrative Orders for remedial investigations and feasibility studies are important legal documents that must be negotiated and reviewed by the regional legal staff.
- o Use of Administrative or Civil Judicial Remedies for Reportable-Quantity Violations will result in legal enforcement activity in an area where formerly only criminal remedies were available.

- o Emergence of Federal facilities as an important subject of EPA attention will demand energetic legal participation in the negotiation of implementable agreements.

Because of the preeminence of negotiation, legal enforcement resources will continue to be involved early in the enforcement decision-making process. In addition, the requirement for active state participation and renewed emphasis on public participation will complicate all legal action. Legal enforcement resources will also be responding to a steady growth in the NPL. Substantial emphasis will be placed on cost recovery actions, particularly those begun in prior years.

1989 Program

In 1989, the Agency is allocating a total of \$13,672,800 supported by 277.2 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

Legal work is continuing on a number of landmark CERCLA cases. The importance of intense legal involvement early in enforcement actions to achieve maximum environmental benefit is recognized by identification of intermediate steps in the enforcement process, careful linking of outputs to CERCLA technical enforcement projections, and estimation of the degree of legal input at each stage. In 1989, a large proportion of regional legal resources are being utilized in negotiation with responsible parties and in administrative enforcement. This shift of legal staff attention to earlier stages in the enforcement process should prove cost-effective by reducing the need for protracted judicial litigation. Civil judicial referrals are used primarily to secure potentially responsible party cleanup and for larger cost recovery actions.

Headquarters support for judicial enforcement remains essential as the Agency establishes precedents with new types of enforcement activity such as civil remedies for reportable quantity violations. In addition, policy development and guidance work is underway in the areas of landowner liability, stipulated penalties, administrative penalty procedures, arbitration regulations, and the Section 106 strategy. Development of these policies is needed to effectively implement SARA.

1988 Accomplishments

In 1988, the Agency obligated \$11,583,900 supported by 227.4 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

In 1988, Headquarters and Regional attorneys contributed valuable legal support to the best year ever for enforcement with PRP settlements. The 1988 totals for removals (85), remedial investigations/feasibility studies (RI/FS) (74), and remedial design/remedial actions (RD/RA) (55), were nearly 50% of total activity levels in the period 1981-1987.

In 1988, Headquarters staff provided significant support to negotiations and trial preparation for cases such as Stringfellow, Love Canal, and Cannon Engineering. A summary judgement on liability was obtained against Occidental in the Love Canal case, clearing the way for cost recovery litigation in 1989.

During 1988, Headquarters developed guidance to assist in implementation of SARA provisions (e.g., de minimis settlements, access to sites, information gathering through request letters and subpoenas, etc.) which will improve the consistency of Federal Superfund enforcement actions. Substantial resources were also used to participate in the NCP revisions. In addition to on-site consultation, technical assistance efforts included development of an automated model for calculation of interest payable by defendants in cost recovery cases, and establishment of an automated, key worded full text library of model CERCLA consent decrees.

A Headquarters, Regional and DOJ task force has been formed with the goal of streamlining the civil judicial enforcement process, concentrating on identifying settlement incentives and disincentives, and suggesting policies and procedures to enhance the use of various enforcement tools to encourage settlements. Regional work continued on landmark CERCLA cases, such as Royal C. Hardage, Love Canal, Monsanto (S.C.R.D.I.), Stringfellow, Thomas Solvent, Ottati and Goss, and Western Processing. Significant legal support was devoted to preliminary enforcement activity and administrative enforcement. Civil judicial referrals and follow through continued to demand significant regional legal support.

During 1988, noteworthy settlements were reached with Conservation Chemical, Texas Eastern, and Seymour Recycling. A precedent setting bankruptcy settlement was reached with Smith International, a case involving a large multi-generator site where a significant dollar settlement was achieved. In addition, major progress was made at several Cannons Engineering sites in Region I. The Agency initiated and implemented a strategic enforcement plan intended to obtain full site cleanup and reimbursement of response costs from a large number of parties responsible for four different but related sites. Under the settlement obtained, the large volume PRP generators agreed to undertake several of the site cleanups and reimburse a significant amount of past costs; the de minimis parties agreed, in three separate settlements, to pay money to be used for site cleanup and for reimbursement of the government's costs. By adding premiums to the later settlements, the de minimis agreements were structured in a manner that encouraged PRPs to sign up early in the negotiation process. To encourage early settlement in other cases, the Agency is also pursuing the recalcitrant PRPs for the remaining costs incurred and to be incurred. In taking these actions, the Region has utilized well the enforcement and settlement tools available under CERCLA.

HAZARDOUS SUBSTANCE CRIMINAL INVESTIGATIONS

1990 Program Request

The Agency requests a total of \$1,592,900 supported by 17.3 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in dollars or total workyears from 1989.

SARA contains a number of significant provisions which will improve the effectiveness of the Agency's Criminal Enforcement Program. Existing criminal sanctions (for failure to report releases of hazardous substances, and for submitting false information in a claim) have been raised from misdemeanor to felony-level, punishable by a maximum of three years imprisonment. SARA also establishes a citizen award program to pay cash awards to citizens providing EPA with information on criminal violations. Because of these changes, criminal enforcement activity is expected to continue at the increased levels

experienced in 1988 and 1989. Referral and indictment activity will increase in complexity as well. The substantial growth in the number of NPL sites has increased the temptation to avoid liability by falsifying documents. Improvements in staff capabilities through training and development of relevant automated information systems will assist investigators in responding to the increase in complexity.

1989 Program

In 1989, the Agency is allocating a total of \$1,592,900 supported by 17.3 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

As discussed above, 1989 criminal investigative activity is responding to an increase in volume and complexity of Superfund-related issues. With aggressive use of the more severe SARA sanctions, the regulated community is expected to become more aware of the penalties associated with submission of false information. In 1989, the clear establishment of the Agency's deterrent message on these important concerns is being made through an increase in investigative activity. However, because prosecutions are frequently combined with counts under other statutory authorities, CERCLA output data taken alone do not accurately reflect the amount of effort expended.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,378,500 supported by 20.1 total workyears, all of which is from the Hazardous Substance Superfund appropriation.

Investigative resources were devoted to implementation of the expanded enforcement authorities under SARA, linked, as appropriate, to other statutory enforcement actions for maximum impact.



Management and Support

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>SUPERFUND</u>	14-1
 <u>MANAGEMENT AND SUPPORT</u>	
Hazardous Substance Management and Support.	14-58
Hazardous Substance Financial Management - Headquarters.	14-64
Hazardous Substance Financial Management - Regions	14-65
Hazardous Substance Administrative Management - Headquarters . . .	14-65
Hazardous Substance Administrative Management - Regions.	14-66
Hazardous Substance Contracts and Grants	
Management - Headquarters.	14-67
Hazardous Substance Contracts and Grants	
Management - Regions	14-68
Hazardous Substance Support Services - Headquarters.	14-68
Hazardous Substance Support Services - Regions	14-69
Hazardous Substance Computer Services.	14-69
Hazardous Substance Legal Services - Headquarters.	14-70
Hazardous Substance Legal Services - Regions	14-70
Hazardous Substance - Office of the Inspector General.	14-71
Hazardous Substance - Office of Policy, Planning and Evaluation. .	14-72
Hazardous Substance - Office of the Comptroller.	14-74
Hazardous Substance - Office of External Affairs	14-74
Hazardous Substance - Executive Offices.	14-75
Hazardous Substance - Office of Research	
and Development - Lab Support.	14-76



SUPERFUND
Management and Support

PROGRAM	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
Hazardous Substance Financial Management Headquarters					
Hazardous Substance Superfund	\$6,535.7	\$9,284.3	\$16,284.3	\$9,364.3	-\$6,920.0
TOTAL	\$6,535.7	\$9,284.3	\$16,284.3	\$9,364.3	-\$6,920.0
Hazardous Substance Financial Management Regions					
Hazardous Substance Superfund	\$3,648.8	\$6,171.8	\$6,172.5	\$6,239.0	\$66.5
TOTAL	\$3,648.8	\$6,171.8	\$6,172.5	\$6,239.0	\$66.5
Hazardous Substance Administrative Management Headquarters					
Hazardous Substance Superfund	\$13,320.9	\$13,668.1	\$13,672.1	\$4,093.9	-\$9,578.2
TOTAL	\$13,320.9	\$13,668.1	\$13,672.1	\$4,093.9	-\$9,578.2
Hazardous Substance Administrative Management - Regions					
Hazardous Substance Superfund	\$3,250.8	\$2,925.3	\$3,434.9	\$2,642.9	-\$792.0
TOTAL	\$3,250.8	\$2,925.3	\$3,434.9	\$2,642.9	-\$792.0
Hazardous Substance Contracts and Grants Management Headquarters					
Hazardous Substance Superfund				\$10,281.2	\$10,281.2
TOTAL				\$10,281.2	\$10,281.2

SUPERFUND
Management and Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989

(DOLLARS IN THOUSANDS)					
Hazardous Substance Contracts and Grants Management - Regions Hazardous Substance Superfund				\$1,932.0	\$1,932.0
TOTAL				\$1,932.0	\$1,932.0
Hazardous Substance Support Services Headquarters Hazardous Substance Superfund	\$22,750.0	\$30,447.7	\$30,447.7	\$32,996.9	\$2,549.2
TOTAL	\$22,750.0	\$30,447.7	\$30,447.7	\$32,996.9	\$2,549.2
Hazardous Substance Support Services Regions Hazardous Substance Superfund	\$15,084.3	\$14,931.4	\$15,267.2	\$14,965.5	-\$301.7
TOTAL	\$15,084.3	\$14,931.4	\$15,267.2	\$14,965.5	-\$301.7
Hazardous Substance Computer Services Hazardous Substance Superfund	\$5,872.2	\$7,247.7	\$7,247.7	\$10,279.8	\$3,032.1
TOTAL	\$5,872.2	\$7,247.7	\$7,247.7	\$10,279.8	\$3,032.1
Hazardous Substance Legal Services Headquarters Hazardous Substance Superfund	\$866.6	\$756.0	\$756.0	\$816.0	\$60.0
TOTAL	\$866.6	\$756.0	\$756.0	\$816.0	\$60.0
Hazardous Substance Legal Services Regions Hazardous Substance Superfund	\$949.9	\$1,162.8	\$1,162.8	\$1,162.8	
TOTAL	\$949.9	\$1,162.8	\$1,162.8	\$1,162.8	

SUPERFUND
Management and Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
Hazardous Substance Office of the Inspector General					
Hazardous Substance Superfund	\$6,285.1	\$6,896.1	\$6,896.1		-\$6,896.1
TOTAL	\$6,285.1	\$6,896.1	\$6,896.1		-\$6,896.1
Hazardous Substance Office of the Inspector General					
Office of the Inspector General				\$10,316.9	\$10,316.9
TOTAL				\$10,316.9	\$10,316.9
Hazardous Substance Office of Policy, Planning And Evaluation					
Hazardous Substance Superfund	\$4,315.5	\$3,433.5	\$3,433.5	\$3,433.5	
TOTAL	\$4,315.5	\$3,433.5	\$3,433.5	\$3,433.5	
Hazardous Substance Office of the Comptroller					
Hazardous Substance Superfund	\$843.5	\$944.0	\$944.0	\$1,064.0	\$120.0
TOTAL	\$843.5	\$944.0	\$944.0	\$1,064.0	\$120.0
Hazardous Substance Office of External Affairs					
Hazardous Substance Superfund	\$111.6	\$202.5	\$202.5	\$202.5	
TOTAL	\$111.6	\$202.5	\$202.5	\$202.5	
Hazardous Substance Executive Offices					
Hazardous Substance Superfund		\$401.0	\$401.0	\$401.0	
TOTAL		\$401.0	\$401.0	\$401.0	

SUPERFUND
Management and Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
Hazardous Substance Office of Research and Development - Lab Support					
Hazardous Substance Superfund	\$215.9	\$250.0	\$250.0	\$450.0	\$200.0
TOTAL	\$215.9	\$250.0	\$250.0	\$450.0	\$200.0
TOTAL:					
Hazardous Substance Superfund	\$84,050.8	\$98,722.2	\$106,572.3	\$100,325.3	-\$6,247.0
Office of the Inspector General				\$10,316.9	\$10,316.9
Management and Support TOTAL	\$84,050.8	\$98,722.2	\$106,572.3	\$110,642.2	\$4,069.9
PERMANENT WORKYEARS -----					
Hazardous Substance Financial Management Headquarters	50.8	53.0	53.0	54.4	1.4
Hazardous Substance Financial Management Regions	72.5	90.2	90.2	95.9	5.7
Hazardous Substance Administrative Management Headquarters	145.1	172.3	159.3	54.7	-104.6
Hazardous Substance Administrative Management - Regions	76.3	66.6	78.3	55.8	-22.5
Hazardous Substance Contracts and Grants Management Headquarters				124.6	124.6

SUPERFUND
Management and Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
Hazardous Substance Contracts and Grants Management - Regions				46.0	46.0
Hazardous Substance Legal Services Headquarters	9.8	11.0	10.9	12.0	1.1
Hazardous Substance Legal Services Regions	21.6	24.7	24.7	25.9	1.2
Hazardous Substance Office of the Inspector General	52.3	52.8	52.8	67.8	15.0
Hazardous Substance Office of Policy, Planning And Evaluation	8.3	10.0	10.0	12.8	2.8
Hazardous Substance Office of the Comptroller	10.7	11.9	11.9	13.9	2.0
Hazardous Substance Office of External Affairs	1.8	3.0	3.0	3.0	
Hazardous Substance Executive Offices		1.0	1.0	1.0	
TOTAL PERMANENT WORKYEARS	449.2	496.5	495.1	567.8	72.7
TOTAL WORKYEARS					
Hazardous Substance Financial Management Headquarters	51.6	53.0	53.0	54.4	1.4
Hazardous Substance Financial Management Regions	78.2	96.0	95.9	95.9	

SUPERFUND
Management and Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
Hazardous Substance Administrative Management Headquarters	151.9	172.3	159.3	54.7	-104.6
Hazardous Substance Administrative Management - Regions	89.3	71.1	82.8	55.8	-27.0
Hazardous Substance Contracts and Grants Management Headquarters				124.6	124.6
Hazardous Substance Contracts and Grants Management - Regions				46.0	46.0
Hazardous Substance Legal Services Headquarters	10.0	11.0	10.9	12.0	1.1
Hazardous Substance Legal Services Regions	25.1	25.9	25.9	25.9	
Hazardous Substance Office of the Inspector General	52.6	52.8	52.8	67.8	15.0
Hazardous Substance Office of Policy, Planning And Evaluation	11.7	12.8	12.8	12.8	
Hazardous Substance Office of the Comptroller	10.7	11.9	11.9	13.9	2.0
Hazardous Substance Office of External Affairs	1.8	3.0	3.0	3.0	
Hazardous Substance Executive Offices		1.0	1.0	1.0	
TOTAL WORKYEARS	482.9	510.8	509.3	567.8	58.5

SUPERFUND

Hazardous Substance Management and Support

Budget Request

The Agency requests a total of \$110,642,200 supported by 567.8 total workyears for 1990, an increase of \$4,069,900 and 58.5 total workyears from 1989. All of the request will be for the Hazardous Substance Superfund appropriation.

HAZARDOUS SUBSTANCE FINANCIAL MANAGEMENT - HEADQUARTERS

1990 Program Request

The Agency requests a total of \$9,364,300 supported by 54.4 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$6,920,000 and an increase of 1.4 total workyears from 1989. This will provide for the implementation and maintenance of an automated nationwide document storage and retrieval system and an increased cost recovery program. The decrease in dollars requested reflects the purchase of the system in 1989.

The program will continue to provide the level of Headquarters financial management support necessary to ensure the integrity of Superfund site-specific cost accounting data. This encompasses the review and reconciliation of Headquarters site-specific documents as they are being processed to assure that the information is accurate as well as to assure that it is entered into the Financial Management System accurately. It also includes monitoring of Headquarters costs charged to site-specific accounts by EPA employees, other Federal agencies, State and local governments, and commercial entities to ensure that amounts are properly documented and within budget. The program will also calculate and apply indirect cost rates to assure that full Agency costs are charged to sites and claimed in cost recovery actions. In addition, the program will provide for basic financial services including payroll support, invoice and voucher processing, reports preparation, and funds control for Headquarters.

1989 Program

In 1989, the Agency is allocating a total of \$16,284,300 supported by 53.0 total workyears for this program, all of which is from the Hazardous Substance Response Superfund appropriation. These resources provide for the purchase of an automated document collection and retrieval system that is necessary to maintain pace with the increased requests for cost documentation. These resources also provide for the establishment of current cost documentation files in Headquarters so that costs claimed in cost recovery litigation can be supported immediately. This is particularly important in bankruptcy cases where time is of the essence. In the past, an extensive manual file search has been necessary to gather documents that support costs being claimed. In addition, these resources provide for an enhanced level of review and reconciliation to insure the integrity of Headquarters charges posted against site-specific accounts in the Financial Management System as well as providing for basic financial services to an expanding Superfund program.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,535,700 supported by 51.6 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources provided for site-specific accounting support and preparation of cost recovery documentation. Also provided were basic financial services for the Superfund program such as payroll and invoice processing.

HAZARDOUS SUBSTANCE FINANCIAL MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$6,239,000 supported by 95.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$66,500 and no change in total workyears from 1989. This will provide for the collection and verification of regional cost documentation and the reconciliation of these documents with the Financial Management System on a current basis. This will be done by establishing a cost documentation file in each region as costs are incurred rather than gathering documentation at a later date. This will allow us to respond immediately with documentation for bankruptcy cases where time is of the essence as well as assure that all documents needed for protracted negotiation or litigation are available when requested. Resources will also provide for the review of State accounting systems and for support to assure that State systems adequately document expenditures of Federal assistance so that they too can be recovered from responsible parties. Also included are resources necessary to provide basic financial services to the regional Superfund program for payroll and voucher processing, funds control and reporting for management and program purposes.

1989 Program

In 1989, the Agency is allocating a total of \$6,172,500 supported by 95.9 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources support the enhanced regional Superfund financial activities, specifically the cost documentation file and the State accounting systems described above.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,648,800 supported by 78.2 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. With these resources, the regional financial management offices provided site-specific accounting support and gathered regional cost documentation as requested by regional counsel when cases entered the negotiation or litigation phases. Also provided were basic financial services for the regional Superfund program, such as payroll and invoice processing and reporting.

HAZARDOUS SUBSTANCE ADMINISTRATIVE MANAGEMENT - HEADQUARTERS

1990 Program Request

The Agency requests a total of \$4,093,900 supported by 54.7 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$9,578,200 and 104.6

total workyears from 1989. The reduction in resources reflects the transfer of Contracts and Grants workyears to a new program element in FY 1990, Hazardous Substance - Contracts and Grants, Headquarters. We will continue to effectively manage automated systems, provide recruitment, staffing, training/development, workforce planning, management and organizational analysis, and classification activities and provide sufficient facilities management to support the overall Superfund program. We will develop health and safety training courses, implement specialized medical monitoring programs, and verify through technical support and environmental audits that Superfund waste handled by EPA laboratories is disposed in accordance with the off-site disposal requirements of the statute. A regional contract for Superfund waste disposal at EPA laboratories is anticipated.

1989 Program

In 1989, the Agency is allocating a total of \$13,672,100 supported by 159.3 total workyears for this program, all of which is from the Hazardous Substance Response Superfund appropriation. These resources enable the program to provide centralized administrative and management services to Superfund activities. In 1989, emphasis will be on awarding and managing increasing numbers of contracts, grants, cooperative and interagency agreements. Special emphasis will be placed on oversight of grants activities and developing guidance for more complex cooperative agreements and new program grants. Another priority is to provide for the intense and specialized training needs of Superfund employees, and to provide management and organizational analysis to strengthen Superfund management processes. These resources will provide technical support, guidance, training, and oversight to ensure that Superfund waste from EPA labs is properly managed. We also plan to create a database on protective clothing to enhance the health and safety of our employees. Resources are used to revise or develop information systems including systems to track hazardous substance releases at Federal Facilities, and the administrative/financial systems used to manage the Superfund Program.

1988 Accomplishments

In 1988, the Agency obligated a total of \$13,320,900 supported by 151.9 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources enabled the Agency to award and administer the contracts and cooperative and interagency agreements required to carry out emergency and remedial response activities and provided central technical support for developing, operating, and maintaining all automated Superfund information systems. The Agency completed environmental audits at EPA laboratories to document the procedures for the disposal of Superfund waste. We provided training to EPA labs on these requirements and developed improved chemical protective clothing information. We also refined health and safety standards and procedures, and maintained and supported the Agency human resources requirements of the Superfund program staff. The Agency developed delegations of authority so that Superfund activities could be carried out in an effective manner.

HAZARDOUS SUBSTANCE ADMINISTRATIVE MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$2,642,900 supported by 55.8 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$792,000 and 27.0 total

workyears from 1989. The reduction in resources reflects the transfer of Contract and Grant workyears to a new program element in FY 1990, Hazardous Substance - Contracts and Grants Management, Regions. Regional administrative management activities will include: continuing recruitment of personnel to work in the area of hazardous waste, assuring a reliable health and safety and environmental compliance program, providing adequate ADP technical assistance to support the site-specific recordkeeping requirements of the Superfund program and improved information systems for EPA and State operations.

1989 Program

In 1989, the Agency is allocating a total of \$3,434,900 supported by 82.8 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources provide regional Superfund administrative support services for contracting and procurement, personnel, health and safety, and environmental compliance of EPA facilities, and information management activities. Workyear increases reflect the implementation of the Agency's decentralized Superfund contracting strategy. The program is placing special emphasis on efforts to recruit properly qualified personnel and to provide for the intense and specialized training needs of Superfund employees. Increased efforts are also underway in the area of information resources management to efficiently respond to increasing program demands for staff support.

1988 Accomplishments

In 1988, the Agency obligated a total of \$3,250,800 supported by 89.3 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources provided a full complement of administrative management services to the regional Superfund program.

HAZARDOUS SUBSTANCE CONTRACTS AND GRANTS MANAGEMENT - HEADQUARTERS

1990 Program

The Agency requests a total of \$10,281,200 supported by 124.6 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$750,000 and 15 total workyears over the 1989 program. However, the total dollar and workyear level is an increase as the program element is new in 1990. This increase will continue to effectively award and actively manage rapidly increasing numbers of contracts as well as assure quality control over contracts with increasingly high obligation amounts. The increased resources will provide more effective assistance and contracts management through greater outreach to the regions and states; ensure a more aggressive Superfund cost-recovery documentation effort; support more oversight, training and technical assistance to our federal partners; and develop and refine policy guidance and procedures for more complex procurement needs and cooperative and interagency agreements and new grant programs.

1989 Program

Resources for this program resided in Hazardous Substance Administrative Management - Headquarters in 1989.

1988 Accomplishments

Resources for this program resided in Hazardous Substance Administrative Management - Headquarters in 1988.

HAZARDOUS SUBSTANCE CONTRACTS AND GRANTS MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$1,932,000 supported by 46.0 total work-years for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$950,000 and 19 total workyears over the 1989 program. However, the total dollar and workyear level is an increase as the program element is new in 1990. This increase will allow the Agency to staff the Regional Contracting Officer Program. These workyears will provide the Regional Superfund program offices with procurement and contracts management support for the remedial and removal programs. The grants increase will be used to effectively award, administer and manage complex Superfund cooperative and interagency agreements and grants for emergency and remedial response activities. Special emphasis will be placed on accountability and ensuring that every Superfund assistance award complies with regulatory and policy requirements.

1989 Program

Resources for this program resided in Hazardous Substance Administrative Management-Regions in 1989.

1988 Accomplishments

Resources for this program resided in Hazardous Substance Administrative Management-Regions in 1988.

HAZARDOUS SUBSTANCE SUPPORT SERVICES - HEADQUARTERS

1990 Program Request

The Agency requests a total of \$32,996,900 for this program, all of which will be for the Hazardous Substance Superfund Appropriation. This represents an increase of \$2,549,200 from 1989. The increase reflects the additional management and support required for the operation of an expanding Hazardous Substance Response program. These resources will fund the Hazardous Substance Response program's share of Headquarters and Agencywide costs and support enhanced program systems modernization. These costs will include: facilities rental, Federal Telecommunications System, revisions and development of information systems, utilities, local telephone service, printing and copying, postage, other building and office services and health and safety training. This request also reflects the transfer of \$720,800 for basic Support services to the Inspector General Appropriation to implement the new Inspector General Act Amendments of 1988.

1989 Program

In 1989, the Agency is allocating a total of \$30,447,700 for this program, all of which is from the Hazardous Substance Superfund appropriation. The

resources fund support costs in Headquarters which include facilities rental, FTS, utilities, local telephone and other related services.

1988 Accomplishments

In 1988, the Agency obligated a total of \$22,750,000 for this program, all of which was from the Hazardous Substance Superfund appropriation. These resources were the Superfund programs' share of the Agency management and support costs needed to operate the Headquarters operation.

HAZARDOUS SUBSTANCE SUPPORT SERVICES - REGIONS

1990 Program Request

The Agency requests a total of \$14,965,500 for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents a decrease of \$301,700 from 1989. This will support the operation of the Hazardous Substance Response program and will cover utilities, local telephone service, printing and copying, minicomputer operations, equipment maintenance, and all other support services related to the Superfund program activities in the Regions.

1989 Program

In 1989, the Agency is allocating a total of \$15,267,200 for this program, all of which is from the Hazardous Substance Superfund appropriation. This program is funding the same services that will be supported in 1990.

1988 Accomplishments

In 1988, the Agency obligated a total of \$15,084,300 for this program, all of which was from the Hazardous Substance Superfund appropriation. This program funded the same services that will be supported in 1990.

HAZARDOUS SUBSTANCE COMPUTER SERVICES

1990 Program Request

The Agency requests a total of \$10,279,800 for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$3,032,100 which will be used to support the additional ADP requirements for the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), the Superfund contract laboratory program data systems that support the program. These resources will provide centralized computing services to the Hazardous Substance Response Program by the Agency's National Computer Center in Research Triangle Park, North Carolina. These funds pay a portion of the Center's costs for equipment, telecommunications, software leases and maintenance and facility operations.

1989 Program

In 1989, the Agency is allocating \$7,247,700 for this program, all of which is from the Hazardous Substance Superfund appropriation. This amount reflects an increase in the size and use of Hazardous Substance Response program data bases.

1988 Accomplishments

In 1988, the Agency obligated a total of \$5,872,200 for this program, all of which was from the Hazardous Substance Superfund appropriation. The program provided computer services to the Hazardous Substance Response program.

HAZARDOUS SUBSTANCE LEGAL SERVICES - HEADQUARTERS

1990 Program Request

In 1990, the Agency requests a total of \$816,000 supported by 12.0 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$60,000 and an increase of 1.1 total workyears from 1989. The increases will support resolution of appeals under the Freedom of Information Act (FOIA).

The Office of General Counsel (OGC) will provide legal advice and consultation on matters related to the implementation of the Superfund program. The OGC will support the Agency's promulgation of rules, establishment of policy and preparation of guidance documents for program implementation of the Superfund program. This includes legal support to financial and administrative operation of Superfund, including contract law, audits, cooperative agreements and FOIA. The OGC handles Superfund litigation in which the Agency is a defendant.

1989 Program

In 1989, the Agency is allocating a total of \$756,000 supported by 10.9 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. The OGC is providing advice and consultation on financial and administrative matters such as eligible uses of the Fund; legal guidance on program matters such as interpretation of the statute, development of regulations, and changes to the National Contingency Plan; and defense of the Agency in any litigation brought against it concerning CERCLA.

1988 Accomplishments

In 1988, the Agency obligated a total of \$866,600 supported by 10.0 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. The OGC provided legal guidance in program matters such as statutory interpretation, development of response priorities, review of proposed regulatory actions, and defense of the Agency where litigation had been brought against it concerning CERCLA.

HAZARDOUS SUBSTANCE LEGAL SERVICES - REGIONS

1990 Program Request

In 1990, the Agency requests a total of \$1,162,800 supported by 25.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund Appropriation. This represents no change from 1989.

The Offices of Regional Counsel will provide legal advice and consultation on matters related to the implementation of the Superfund program to the Regional Administrators, Regional Superfund managers and State agencies. Principal activities will be the defense of the Agency in CERCLA litigation

filed against it, participation in formal administrative proceeding, review of state cooperative agreements, activities relating to access by the public to EPA held information, development of the administrative record for the selection of cleanup remedies, legal support to program response activities, and the provision of a wide variety of legal counsel and advice to Regional, state and local program officials.

1989 Program

In 1989, the Agency is allocating a total of \$1,162,800 supported by 25.9 total workyears for this program, all of which is from the Hazardous Substance Superfund Appropriation. The Offices of Regional Counsel will continue to represent the Agency in regional defensive litigation concerning Superfund. In addition, the Offices of Regional Counsel will provide legal assistance by reviewing state cooperative agreements for legal sufficiency; advising state agencies regarding the legal requirements of the Superfund program; determining eligible uses of the Fund; and advising on the treatment of requests for EPA held information.

1988 Accomplishments

In 1988, the Agency obligated a total of \$949,900 supported by 25.1 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. The Offices of Regional Counsel provided EPA and state agencies with legal advice and consultation on matters related to the implementation of CERCLA. Principal activities of the Offices of the Regional Counsel included the conduct of defensive litigation, legal review of cooperative agreements with states for site cleanup, and general legal support to the Superfund program in the Regions.

HAZARDOUS SUBSTANCE - OFFICE OF INSPECTOR GENERAL

1990 Program Request

The Agency requests a total of \$10,316,900 supported by 67.8 total workyears for this program, all of which will be activities in the Office of the Inspector General appropriation that were transferred from the Hazardous Substance Superfund appropriation. This represents an increase of \$3,420,800 and 15 total workyears in support of the Inspector General's statutory requirements from the Superfund reauthorization, additional critically needed audits, and support costs such as rent, telecommunications, and ADP. As a result of recently enacted legislation, the OIG now has a separate appropriation which necessitates billing Superfund for staff support costs. The OIG will expand its program of external audits performed by public accounting firms and other Government agencies as well as provide additional but limited internal audit coverage to examine the economy, efficiency, and effectiveness of the Fund's management. The OIG will continue to investigate referrals of suspected criminal activity with high potential for criminal prosecution. Also, investigative resources will enable the Office of Inspector General to identify and eliminate situations which create the opportunity for fraud and abuse.

1989 Program

In 1989, the Agency is allocating a total \$6,896,100 supported by 52.8 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources enable the Office of Inspector

General to continue meeting the statutory requirements placed on it by Congress in the Superfund reauthorization. These annual requirements include (1) auditing payments, obligations, reimbursements or other uses of the funds; (2) examining a sample of agreements with States carrying out response actions; (3) examining remedial investigations and feasibility studies; (4) reviewing the Administrator's status report on all remedial and enforcement actions; and (5) reviewing the Administrator's estimate of the amount of resources necessary for EPA to complete the implementation of its Superfund responsibilities. The OIG will also continue its program of external audits performed by public accounting firms and other Government audit agencies as well as operate a limited internal audit program to examine the economy, efficiency, and effectiveness of the Fund's management. It will investigate referrals of suspected criminal activity with high potential for criminal prosecution and develop and present training for the identification of deficiencies and indicators of wrong-doing.

1988 Accomplishments

In 1988, the Agency obligated a total of \$6,285,100 supported by 52.6 workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. During 1988, the Office of Inspector General issued 86 audit reports on the Fund. Internal audits focused on: improvements to the management and performance of State cooperative agreements; the Agency's accounting for Superfund costs, receivables and property; and the propriety of EPA's payments to technical support contractors for non-technical work. Superfund audits questioned and set aside almost \$300 million of the approximately \$2.7 billion audited. Investigative efforts resulted in the identification of several major schemes in connection with cleanup actions that are being pursued for both criminal and civil prosecution.

HAZARDOUS SUBSTANCE - OFFICE OF POLICY, PLANNING AND EVALUATION

1990 Program Request

The Agency requests a total of \$3,433,500 supported by 12.8 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in total dollars and no change in total workyears from 1989.

The Office of Policy Analysis (OPA) will continue policy development and analysis of effects of the revised National Contingency Plan (NCP) on program/enforcement implementation under the Superfund Amendment and Reauthorization Act (SARA) of 1986. It will remain involved in the development, review, and analysis of policy proposals, including extensive workgroup participation; assist the Regions and the program (OSWER) with incorporating risk information into Superfund selection of remedy decisions; develop a data base of Records of Decision and other documents to serve as a repository of risk and other technical/policy types of information; and analyze the use and effectiveness of institutional controls at Superfund sites. With the Office of Management Systems and Evaluation (OMSE), OPA will undertake a comprehensive review of the Superfund program in order to assess a program planning and implementation.

The Office of Standards and Regulations (OSR) will continue to provide statistical support to the program office, designing statistical methodologies for Superfund site characterization and developing guidelines for evaluating attainment of standards in additional media at disposal sites. In the information policy area, OSR will initiate development of expert-system based

electronic data collection instruments which will replace currently used paper forms, build in data quality and control, and provide data in an electronic medium readily transferred to program office data bases. Regulatory innovations will target greater participation by potentially responsible parties (PRPs) and states in clean-ups, increased use of innovative technology, and consideration of wetland restoration by PRPs through mitigation banks.

OMSE will continue to conduct management reviews of several states and Regions to determine how best to oversee the hazardous waste programs. Program evaluation studies will include public involvement in selection of Superfund remedies and state roles in Superfund. OMSE will continue its studies of Superfund implementation -- with a focus on evaluation of steps taken to deal with problems previously identified by OMSE and other groups.

1989 Program

In 1989, the Agency is allocating a total of \$3,433,500 supported by 12.8 total workyears for this program, all of which is from the Hazardous Substance Superfund appropriation.

OPA is concentrating on policy development as the Superfund program implements the 1986 amendments and the revised NCP. It is working on the development, review, and analysis of policy proposals, including extensive workgroup participation; conducting comprehensive analysis of Superfund risk data; assisting the Regions in implementing risk assessment methodologies and decision-making processes; evaluating the impact of the amendments and the revised NCP on remedy decisions and analyzing the role of states and citizens in the Superfund process as an adjunct to OMSE studies.

OSR continues development of statistical guidance for determining attainment of cleanup standards at Superfund sites, support for enforcement of Superfund site cleanup, and statistical consultation on complex or unique problems. OSR's ongoing efforts to develop innovative approaches to implementation of Superfund include application of alternative dispute resolution to expedite Superfund settlements and fostering innovative cleanup technologies.

OMSE is working with OSWER to identify and study Superfund implementation issues to provide options for overcoming obstacles to effective implementation of the Superfund program. The Superfund Indicators Demonstration Project will continue with focus groups including the public, the Congress, and other interest groups to test the usefulness of measures for communicating progress. OMSE evaluation studies include identifying and overcoming managerial, organizational, and institutional factors that adversely affect implementation of the Superfund program. OMSE also will study the feasibility of evaluating EPA's efforts to improve states' ability to deal with hazardous waste sites.

1988 Accomplishments

In 1988, the Agency obligated a total of \$4,315,500 supported by 11.7 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation.

OPA identified and analyzed major Superfund implementation policy and regulatory issues. It promoted a balanced review of all statutory criteria in selection of Superfund remedies toward getting prompt action at sites; greater use of multi-media risk assessment methods for setting priorities and making clean-up decisions; and risk communication and citizen participation.

OSR administered EPA's internal review and analysis process and insured compliance with Executive Orders, legislated requirements and the Paperwork Reduction Act. Its statistical activities involved Superfund enforcement and implementation of statistically valid Data Quality Objectives as well as continuing development of sampling methods and guidance for determining when cleanup standards have been met at Superfund sites. Regulatory innovations included investigation of the applicability of wetlands mitigation banking to Superfund sites located in wetlands.

OMSE developed a series of environmental indicators for the Superfund program based primarily on current data available from remedial and removal actions. Program evaluation activities included a study that identified ways of streamlining the process EPA uses to add hazardous waste sites to the National Priority List for the Superfund program.

HAZARDOUS SUBSTANCE - OFFICE OF THE COMPTROLLER

1990 Program Request

The Agency requests a total of \$1,064,000 supported by 13.9 total workyears for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$120,000 and 2.0 total workyears from 1989. These increases reflect the management and support required for an expanding Hazardous Substance Response program, such as improved accounting procedures for cost recovery, Superfund settlement issues, and internal controls for Superfund finances. These resources will support: the preparation of the Agency's budget submissions to the Office of Management and Budget (OMB) and Congress; response to Congressional inquiries; analysis and review of major issues concerning workload and pricing models; and analysis of ongoing resource issues related to the operation and management of the Trust Fund.

1989 Program

In 1989, the Agency is allocating a total of \$944,000 and 11.9 total work-years for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources support the ongoing budget activities; responses to Congressional inquiries and analysis of ongoing resource issues.

1988 Accomplishments

In 1988, the Agency obligated a total of \$843,500 and 10.7 total workyears for this program, all of which was from the Hazardous Substance Superfund appropriation. The Office of the Comptroller coordinated and prepared the OMB and Congressional budget submissions, responded to Congressional inquiries, and provided fund oversight activities including ongoing resource reviews for the Superfund program. In addition, the program conducted in-house studies on site-specific charging.

HAZARDOUS SUBSTANCE - OFFICE OF EXTERNAL AFFAIRS

1990 Program Request

The Agency requests a total of \$202,500 supported by 3.0 total workyears for this office, all of which will be for the Hazardous Substance Superfund appropriation. This represents no change in total dollars and in total

workyears from 1989. The Office of External Affairs (OEA) will continue to use existing, and develop new, communication vehicles to exchange information on acute hazardous, National Priority List (NPL) site activity, emergency planning, chemical release information, and enforcement activity. The Office will also continue to work closely with the Regions and newly established emergency response commissions and local emergency planning committees, and other citizen groups in site activities. OEA will assist Federal agencies in addressing and documenting over 3,000 sites in an EPA Federal agency hazardous waste docket, as well as prepare guidance and technical assistance documents to assess sites in the docket and, if listed on the NPL, to begin remediation efforts.

1989 Program

In 1989, the Agency is allocating \$202,500 and 3.0 total workyears for this office, all of which is from the Hazardous Substance Superfund appropriation. In 1988, OEA is supporting the regions and assisting states and localities with plans to respond to chemical emergencies. The Office is playing a critical role in exchanging information with local health professionals, public safety officials, local government and State government officials. The Office is assisting in the development of Section 120 implementation guidance and policies related to Federal sites and is playing an active role in assisting agencies in meeting SARA requirements.

1988 Accomplishments

In 1988, the Agency obligated a total of \$111,600 supported by 1.8 total workyears, all of which was from the Hazardous Substance Superfund appropriation. The Office coordinated the identification of inactive sites with other Federal agencies; provided a wide variety of communication support, including the development of fact sheets and publications; and worked on information exchange with State and local governments.

HAZARDOUS SUBSTANCE - EXECUTIVE OFFICES

1990 Program Request

The Agency requests a total of \$401,000 supported by 1.0 total workyears for this program, all of which is for the Superfund appropriation. This represents no change from 1989. This program will provide support to the National Environmental Service Officer (NESO) located within the Office of Regional Operations. The NESO will conduct management reviews of Environmental Services Division (ESDs); develop Headquarters guidance to ensure efficiency in the utilization of resources and improved planning/procurement system; represent ESDs in the Superfund program planning and budget activities including workload model development; ensure Superfund policies are effectively communicated to ESDs; schedule and convene quarterly ESDs conferences; plan, schedule and convene meetings of the Superfund Analytical Services Advisory Committee; evaluate options for securing the most effective lab support to meet Superfund goals; and review ESD lab capabilities and their cost effectiveness.

1989 Program

In 1989, the Agency is allocating a total of \$401,000 supported by 1.0 total workyear for this program, all of which is in the Salaries and Expenses appropriation. The NESO provides the ESD's with Headquarters policy guidance, oversight, and management support, in areas affecting both ESDs and Superfund;

their cooperation and participation in meeting the objectives of the Superfund program in the identification of hazardous waste sites and in the management of any potential risks from these sites. The NESO performs analyses of critical Superfund projects such as workload models, quality assurance and quality control roles, sample and site tracking, resource accountability, data usability tracking, laboratory demand, sample analysis options, and analytical costs; and develops a national equipment planning and procurement process for ESDs to meet Superfund and other Agency needs.

1988 Accomplishments

No resources were requested in FY 1988.

HAZARDOUS SUBSTANCE - OFFICE OF RESEARCH AND DEVELOPMENT - LAB SUPPORT

1990 Program Request

The Agency requests a total of \$450,000 for this program, all of which will be for the Hazardous Substance Superfund appropriation. This represents an increase of \$200,000. These resources will provide essential support services for remote Office of Research and Development (ORD) laboratories which perform research in the hazardous substances area. These resources will fund such items as facilities operation and maintenance, utilities and equipment operations, rental costs, and other non-personnel support costs that are essential for the operation and maintenance of ORD's remote laboratories in support of Superfund research. This increase reflects the increased costs of operation for non-personnel support.

1989 Program

In 1989, the Agency is allocating a total of \$250,000 for this program, all of which is from the Hazardous Substance Superfund appropriation. These resources provide for the essential services as described above, which are required to operate and maintain ORD's remote laboratories in support of Superfund research.

1988 Accomplishments

In 1988, the Agency obligated \$215,900 for this program, all of which was from the Hazardous Substance Superfund appropriation. This funding provided the essential ORD laboratory support services associated with the Superfund research program.



15. L.U.S.T.

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	15-1
RESEARCH AND DEVELOPMENT	
LUST Technical Support.	15-4
Environmental Engineering and Technology	15-6
ABATEMENT AND CONTROL	
LUST Guidelines and Implementation.	15-8
ENFORCEMENT	
LUST Enforcement - Office of Enforcement and Compliance	
Monitoring.	15-11
MANAGEMENT AND SUPPORT	
Management and Support.	15-13
Policy and Analysis - Office of Policy, Planning and	
Evaluation	15-15
Administrative Management - Headquarters	15-16
Administrative Management - Regions.	15-16
Legal Services - Office of General Counsel	15-17



LEAKING UNDERGROUND STORAGE TANKS

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

APPROPRIATION

Leaking Underground Storage Tanks	\$41,749.7	\$50,000.0	\$52,325.9	\$100,000.0	\$47,674.1
TOTAL, Leaking Underground Storage Tanks	\$41,749.7	\$50,000.0	\$52,325.9	\$100,000.0	\$47,674.1

PERMANENT WORKYEARS	65.5	82.6	82.6	91.3	8.7
TOTAL WORKYEARS	72.9	90.0	90.0	91.3	1.3
OUTLAYS	\$13,838.0	\$31,820.0	\$31,820.0	\$43,260.0	\$11,440.0
AUTHORIZATION LEVELS	The Superfund Amendments and Reauthorization Act (SARA) of 1986, established the Leaking Underground Storage Tanks Trust Fund and authorizes a total of \$500,000,000 to be appropriated to this fund from 1987 to 1991.				

LEAKING UNDERGROUND STORAGE TANK TRUST FUND

OVERVIEW AND STRATEGY

The goal of Subtitle I of the Solid Waste Disposal Act of 1965, as amended by the Superfund Amendments and Reauthorization Act of 1986, is to assure the timely and appropriate remediation of leaking underground storage tanks containing petroleum. The Leaking Underground Storage Tank (LUST) Trust Fund is to be used by states to provide enforcement and oversight of responses by tank owners and operators who have primary responsibility for cleaning up leaks, and to directly remediate sites that are abandoned or where the owners and operators are unwilling or unable to respond.

The Agency's strategy is to encourage the development of comprehensive and permanent LUST programs in all the states and territories. State program responsibilities include conducting site investigations when the initial report of a leak is received, taking emergency response actions when appropriate, ensuring adequate owner and operator response at as many sites as possible, taking response action when owner and operator response cannot be obtained, and recovering Trust Fund monies spent on response actions. The Agency provides national program direction, guidance, and technical support to support these state activities through cooperative agreements.

This is a period of transition for the state LUST programs from initial program development to full response and enforcement capabilities. States have inventoried thousands of leaking tanks, many of which are now awaiting response. The last of the regulations have been promulgated and will take effect in January, 1989. The leak detection requirements are being phased in beginning with the oldest tanks -- the population most likely to leak. Due to these requirements, the demand on state LUST programs is expected to increase substantially. In support of strong, effective state programs, Agency efforts will focus on (1) enhancing and expanding state programs; (2) strengthening enforcement capabilities; (3) expanding state response capacity; (4) providing national direction and scientific support; and (5) providing management support.

Enhance and Expand State Programs

The Agency's implementation concept is based on the private-sector "franchise" model. Under this model, the Agency seeks to build and enhance state program capabilities. Using the performance appraisal system, the Agency will identify areas where program improvements can be made and will work with the states to provide the technical assistance and training needed. Based on the results of these evaluations, the Agency will develop and distribute practical tools for states and local governments. The Agency will also fund Targeted Improvement Projects (TIPs) to improve state performance and, after evaluating the projects, will disseminate the results on a nationwide basis.

As the workload increases, with the phasing in of leak detection, the Agency will work with states to expand their enforcement, oversight, and response capabilities. In the few states with new programs, the emphasis will remain on basic program development. The Agency will also assist states to develop funding mechanisms to provide ongoing and consistent funding for state LUST programs.

Strengthen Enforcement Capabilities

Enforcement of the LUST program encompasses both voluntary and non-voluntary compliance by owners and operators. Voluntary compliance is the key to successful implementation as the costs of addressing the number of expected leaks will greatly exceed available Federal and state resources. To this end, states must be able to enlist the cooperation of thousands of owners and operators to perform response actions at their own sites, as well as to provide them oversight and technical assistance. Formal enforcement actions will be used to compel response actions by recalcitrant owners and operators.

The Agency will evaluate and develop tools to improve states ability to achieve timely reporting and response by owners and operators. Regional legal staff will provide technical assistance for state enforcement activities.

Expand State Response Capacity

The lack of commercial insurance and other financial assurance mechanisms for many categories of businesses has led to the phasing in of financial responsibility requirements over a two-year period. During this interim period, owners and operators of small facilities may not be financially able to undertake response actions at their sites. In order to address threats to the environment, states will be required to continue to take direct response actions at many of these sites and at abandoned sites.

Provide National Direction and Scientific Support

The Agency's role is to provide national program direction and communicate clear priorities to states implementing the program. EPA will issue guidance and provide direction for all phases of response and enforcement activity. The Agency will also provide technical support focusing on low-cost approaches for assessing site contamination and for evaluating various response technologies.

Provide Management Support

As the program develops and the policies and procedures of the Trust Fund are established, the Agency will continue to provide full support in management and administrative services to program operations. Agency support will be provided in personnel, budgeting, financial management, contracts and grants, legal advice and state program planning and evaluation to ensure effective and efficient program operations.

Consulting Services

Consulting services will be used to evaluate several state management and administrative systems, including grants administration and recordkeeping, to determine areas where the processes can be improved. Input of consultants may be sought as the Agency continues to develop policies to implement the LUST Trust Fund. In addition, technical assistance will be provided by consultants in specialized areas such as site assessment and corrective action technologies and may include some training of state personnel.

Research and Development

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	15-1
RESEARCH AND DEVELOPMENT	
LUST Technical Support.	15-4
Environmental Engineering and Technology	15-6



LEAKING UNDERGROUND STORAGE TANKS (LUST)
LUST Technical Support

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

Environmental Engineering & Technology					
Leaking Underground Storage Tanks	\$749.3	\$770.0	\$770.0	\$773.6	\$3.6
TOTAL	\$749.3	\$770.0	\$770.0	\$773.6	\$3.6
TOTAL:					
Leaking Underground Storage Tanks	\$749.3	\$770.0	\$770.0	\$773.6	\$3.6
LUST Technical Support TOTAL	\$749.3	\$770.0	\$770.0	\$773.6	\$3.6

PERMANENT WORKYEARS

Environmental Engineering & Technology	1.7	2.0	2.0	2.0
TOTAL PERMANENT WORKYEARS	1.7	2.0	2.0	2.0

TOTAL WORKYEARS

Environmental Engineering & Technology	1.9	2.0	2.0	2.0
TOTAL WORKYEARS	1.9	2.0	2.0	2.0



LEAKING UNDERGROUND STORAGE TANKS

Principle Outputs by Objective

Objective 1: Leaking Underground Storage Tank Trust Fund Technical Support.

- 1990:
 - o Report on Soil Washing and In-situ Soil Flushing Demonstrations (Engineering)
 - o Technical Assistance Document on Corrective Action on Contaminated Soils at LUST Sites (Engineering)
 - o Technical Document on the Identification of Innovative/Alternative Corrective Action Technologies (Engineering)
- 1989:
 - o Development of a Technology Transfer Seminar on LUST Corrective Action Technology (Engineering)
- 1988:
 - o Performance Evaluation Report of a Vacuum Extraction Technology (Engineering)
 - o Report on Corrective Action Guidance (Engineering)



LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Technical Support

Budget Request

The Agency requests a total of \$773,600 supported by 2.0 total workyears for 1990, all of which will be for the Leaking Underground Storage Tank (LUST) Trust Fund. This represents an increase of \$3,600 in funding and no change in total workyears for 1990. The increase in funding will cover increased personnel and support costs.

Program Objectives

This program provides technical support to Federal, state, and local agencies implementing the Leaking Underground Storage Tank (LUST) Trust Fund program.

Objective 1: Leaking Underground Storage Tank Trust Fund Technical Support. This activity provides technical support to the Office of Underground Storage Tanks (OUST), Regions, states, and local agencies implementing the LUST Trust Fund program. This work contributes to ensuring the selection of the best available site assessment and cleanup procedures by responsible authorities.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1990 Program Request

The Agency requests a total of \$773,600 supported by 2.0 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund. This represents an increase of \$3,600 in funding and no increase in total workyears.

Leaking Underground Storage Tank Trust Fund Technical Support. This program will evaluate selected cleanup technologies developed for petroleum and hazardous chemical releases and demonstrate them at LUST sites. These evaluations play an important role in developing ORD's capabilities to provide technical guidance for corrective actions at LUST sites. Evaluations/demonstrations will focus on soil washing and in-situ soil flushing techniques.

1989 Program

In 1989, the Agency is allocating a total of \$770,000 supported by 2.0 total workyears for this program, all of which is from the LUST Trust Fund. The program is evaluating RCRA and CERCLA cleanup technologies developed for petroleum and hazardous chemical releases for their applicability to petroleum leaks from underground tanks. Demonstrations at LUST sites are also being conducted. Case studies of past and on-going corrective actions are being performed and a guidance document on site specific procedures for cost-effective corrective action is being outlined.

1988 Accomplishments

In 1988, the Agency obligated a total of \$749,300 supported by 1.9 total workyears for this program, all of which was from the LUST Trust Fund. A full-scale field evaluation of a vacuum extraction technology was initiated at a LUST site. Collection and analysis of an initial data set, including soil-gas, soil and ground water samples, was completed. Results indicated significant reductions in soil contamination. A project was initiated to identify the mechanisms which control the migration, retention, transformation and remobilization of gasoline released from underground storage tanks.

Abatement and Control

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	15-1
ABATEMENT AND CONTROL	
LUST Guidelines and Implementation.	15-8

LEAKING UNDERGROUND STORAGE TANKS (LUST)
Guidelines & Implementation

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
----- (DOLLARS IN THOUSANDS) -----					
PROGRAM -----					
Guidelines & Implementation Leaking Underground Storage Tanks	\$39,230.7	\$46,292.1	\$48,617.9	\$96,300.7	\$47,682.8
TOTAL	\$39,230.7	\$46,292.1	\$48,617.9	\$96,300.7	\$47,682.8
TOTAL: Leaking Underground Storage Tanks	\$39,230.7	\$46,292.1	\$48,617.9	\$96,300.7	\$47,682.8
Guidelines & Implementation	TOTAL \$39,230.7	\$46,292.1	\$48,617.9	\$96,300.7	\$47,682.8
PERMANENT WORKYEARS -----					
Guidelines & Implementation	51.4	56.9	56.9	62.0	5.1
TOTAL PERMANENT WORKYEARS	51.4	56.9	56.9	62.0	5.1
TOTAL WORKYEARS -----					
Guidelines & Implementation	56.0	61.0	61.0	62.0	1.0
TOTAL WORKYEARS	56.0	61.0	61.0	62.0	1.0



LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Guidelines and Implementation

Budget Request

The Agency requests a total of \$96,300,700 supported by 62.0 total workyears for the Leaking Underground Storage Tank Trust Fund appropriation. This is an increase of \$47,682,800 and 1.0 total workyear from 1989.

LUST GUIDELINES AND IMPLEMENTATION

1990 Program Request

The Agency requests a total of \$96,300,700 supported by 62.0 total workyears for 1990 for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$47,682,800 and 1.0 total workyear from 1989. The increases will provide expanded funding of state cooperative agreements in response to an expected backlog of sites ready for cleanup and increasing discoveries of new sites as a result of new leak detection requirements.

In 1990, the number of sites requiring response actions will increase as owners and operators install leak detection devices and procedures and as insurance companies require testing for leaks prior to issuing insurance policies. States will conduct site investigations based on their priority lists, encourage and compel responses by owners and operators, and provide oversight of these responses. States will also initiate response actions at abandoned sites and where the owners and operators are unwilling or financially unable to respond. LUST Trust Fund cooperative agreements will provide a significant level of resources to support these response efforts.

The Agency will continue its comprehensive analysis of functions and tasks to achieve improved state performance in such areas as site assessment and response. These are new fields where many technical issues require resolution. Other areas of effort will include: 1) developing appropriate follow-up guidelines for Trust Fund Implementation; 2) evaluating costs of response, effectiveness of state enforcement, and the ability of states to recover funds; and 3) producing videos and brochures on a number of response topics such as site assessments and corrective action.

EPA will continue to fund Targeted Improvement Projects (TIPs). These projects will allow states to address specific implementation, enforcement, or administrative problems. The results will be evaluated and distributed on a nationwide basis.

The statute requires that Trust Fund funds used to respond to leaking tanks be recovered where possible. The number of states bringing cost recovery actions will increase in 1990. The Agency legal staff will provide assistance on cost recovery issues to the states.

The Agency's major task in the development of state LUST programs is to determine state needs and to develop tools to assist the states and localities in implementing the program. Through the program appraisal system and ongoing communication, EPA will continue working with the states to provide innovative solutions to technical and managerial problems.

1989 Program

In 1989, the Agency is allocating a total of \$48,617,900 supported by 61.0 total workyears, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation.

States are identifying sites, encouraging owners and operators to take needed response actions at their sites, and taking appropriate response actions as necessary. They are also taking enforcement actions to compel owner and operator response. A significant portion of these efforts are funded by LUST Trust Fund cooperative agreements. The Agency will maintain a limited response capability to be used only in extreme emergencies.

The Agency will continue to negotiate new and amend existing cooperative agreements with states. Based on the approved policy, guidance is being developed on cost recovery which allows states to keep recovered LUST Trust Fund money to address additional sites. EPA is also funding TIPs which allow a state to address specific implementation or administrative problems.

The Agency has also developed an enforcement strategy which focuses on achieving voluntary compliance and promotes the use of innovative formal enforcement techniques to achieve non-voluntary compliance. The large number of tanks and facilities potentially requiring response mandates a streamlining of traditional enforcement procedures. Although the states have primary enforcement responsibility, the Agency is prepared to take a limited number of enforcement actions.

EPA is also continuing to implement an outreach program to inform the states, the regulated community, and the public of the risks associated with leaking tanks and the responsibility of owners and operators to manage these risks.

1988 Accomplishments

In 1988, the Agency obligated a total of \$39,230,700 supported by 56.0 total workyears, all of which was from the Leaking Underground Storage Tank Trust Fund appropriation.

The Agency oversaw the development and implementation of state response programs and provided technical assistance to states that needed to develop cooperative agreements to enter the program, and helped prepare states to undertake emergency responses. Agency oversight included the examination of state programs, procedures, and mechanisms for addressing releases, including appropriate program and fiscal systems.

The Agency developed an innovative policy statement and strategy for cost recovery under the LUST Trust Fund program which allows states to keep recovered money to address other sites. Policies and procedures for Federal responses in emergency cases were finalized.

The states have undertaken 16,630 site investigations, 1,750 emergency responses and 4,425 enforcement actions in 1988. In addition, states have provided oversight for or have initiated longer-term response actions at a total of 8,050 sites.

Enforcement

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	15-1
ENFORCEMENT	
LUST Enforcement - Office of Enforcement and Compliance	
Monitoring.	15-11



LEAKING UNDERGROUND STORAGE TANKS (LUST)

LUST Enforcement

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PROGRAM

LUST Legal Enforcement
Leaking Underground
Storage Tanks

	\$132.0	\$255.0	\$255.7	\$270.3	\$14.6
TOTAL	\$132.0	\$255.0	\$255.7	\$270.3	\$14.6

TOTAL:

Leaking Underground
Storage Tanks

	\$132.0	\$255.0	\$255.7	\$270.3	\$14.6
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LUST Enforcement

TOTAL	\$132.0	\$255.0	\$255.7	\$270.3	\$14.6
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PERMANENT WORKYEARS

LUST Legal Enforcement

	1.8	4.5	4.5	5.6	1.1
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TOTAL PERMANENT WORKYEARS

	1.8	4.5	4.5	5.6	1.1
--	-----	-----	-----	-----	-----

TOTAL WORKYEARS

LUST Legal Enforcement

	2.8	5.6	5.6	5.6
--	-----	-----	-----	-----

TOTAL WORKYEARS

	2.8	5.6	5.6	5.6
--	-----	-----	-----	-----



LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Enforcement

Budget Request

The Agency requests a total of \$270,300 supported by 5.6 total workyears, all of which is for the LUST Trust Fund appropriation. This represents an increase of \$14,600.

LUST LEGAL ENFORCEMENT - OFFICE OF ENFORCEMENT AND COMPLIANCE MONITORING

1990 Program Request

The Agency requests a total of \$270,300 supported by 5.6 total workyears, all of which is for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$14,600 in salaries and expenses for increased personnel and support costs, but no change in the total workyears from 1989.

The primary workload for Regional legal enforcement staff in 1990 will shift from the intense involvement in state cooperative agreement negotiations to guidance and technical assistance for the implementation of new LUST programs in those states with signed cooperative agreements. Coordination with states and headquarters will be required to ensure uniform implementation, particularly regarding issues of financial viability of owner/operators, cost recovery, and use of enforcement actions.

1989 Program

In 1989, the Agency is allocating a total of \$255,700 supported by 5.6 total workyears for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation.

Legal efforts are concentrated primarily on developing and negotiating cooperative agreements with the states. Owner/operators generally provide the lead in response actions for releases from leaking tanks. States may take response and enforcement actions, governed by the cooperative agreements negotiated with EPA, which give states authority to determine the need for and type of response actions. The Agency maintains a backup response capability to be used only in the event of a major public health emergency and when no state authority or owner/operator is available to respond in a timely manner. Regional legal staff will issue and follow through on enforcement orders and pursue cost recovery if required.

1988 Accomplishments

In 1988, the Agency obligated a total of \$132,000 supported by 2.8 total workyears for the Leaking Underground Storage Tank Trust Fund appropriation. Initial efforts focused on assisting states in understanding the new legislation and in developing and negotiating Trust Fund cooperative agreements.



Management and Support

ENVIRONMENTAL PROTECTION AGENCY

1990 Budget Estimate

Table of Contents

	<u>Page</u>
<u>LEAKING UNDERGROUND STORAGE TANKS</u>	15-1
MANAGEMENT AND SUPPORT	
Management and Support.	15-13
Policy and Analysis - Office of Policy, Planning and Evaluation	15-15
Administrative Management - Headquarters	15-16
Administrative Management - Regions.	15-16
Legal Services - Office of General Counsel	15-17



LEAKING UNDERGROUND STORAGE TANKS (LUST)
LUST Management & Support

	ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989	
----- (DOLLARS IN THOUSANDS) -----						
PROGRAM -----						
Policy & Analysis - Office of Policy, Planning & Evaluation Leaking Underground Storage Tanks	\$283.1	\$310.0	\$310.0	\$276.9	-\$33.1	
TOTAL	\$283.1	\$310.0	\$310.0	\$276.9	-\$33.1	
Administrative Management - Office of Administration & Resources Management Leaking Underground Storage Tanks	\$1,228.1	\$2,088.8	\$2,087.5	\$2,079.2	-\$8.3	
TOTAL	\$1,228.1	\$2,088.8	\$2,087.5	\$2,079.2	-\$8.3	
Legal Services - Office of General Counsel Leaking Underground Storage Tanks	\$126.5	\$284.1	\$284.8	\$299.3	\$14.5	
TOTAL	\$126.5	\$284.1	\$284.8	\$299.3	\$14.5	
TOTAL: Leaking Underground Storage Tanks	\$1,637.7	\$2,682.9	\$2,682.3	\$2,655.4	-\$26.9	
LUST Management & Support	TOTAL	\$1,637.7	\$2,682.9	\$2,682.3	\$2,655.4	-\$26.9

LEAKING UNDERGROUND STORAGE TANK TRUST FUND
LUST Management & Support

ACTUAL 1988	ENACTED 1989	CURRENT ESTIMATE 1989	REQUEST 1990	INCREASE + DECREASE - 1990 VS 1989
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(DOLLARS IN THOUSANDS)

PERMANENT WORKYEARS

Policy & Analysis - Office of Policy, Planning & Evaluation	.3	1.0	1.0	.3	-.7
Administrative Management - Office of Administration & Resources Management	8.2	14.0	14.0	16.0	2.0
Legal Services - Office of General Counsel	2.1	4.2	4.2	5.4	1.2
TOTAL PERMANENT WORKYEARS	10.6	19.2	19.2	21.7	2.5

TOTAL WORKYEARS

Policy & Analysis - Office of Policy, Planning & Evaluation	.6	1.0	1.0	.3	-.7
Administrative Management - Office of Administration & Resources Management	8.3	15.0	15.0	16.0	1.0
Legal Services - Office of General Counsel	3.3	5.4	5.4	5.4	
TOTAL WORKYEARS	12.2	21.4	21.4	21.7	.3

LEAKING UNDERGROUND STORAGE TANK (LUST) TRUST FUND

LUST Management and Support

Budget Request

The Agency requests a total of \$2,655,400 supported by 21.7 total workyears for 1990, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents a decrease of \$26,900 and an increase of .3 total workyears from 1989.

POLICY AND ANALYSIS - OFFICE OF POLICY, PLANNING AND EVALUATION

1990 Program Request

The Agency requests a total of \$276,900 supported by 0.3 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents a decrease of \$33,100 and a decrease of 0.7 total workyears from 1989. These decreases reflect the shift in emphasis from policy development, led by the policy office (OPA), to implementation led by the program office.

OPA will continue to assist the program in developing a better understanding of the problem created by the approximately 3,500,000 million underground storage tanks (USTs) exempt from UST requirements, as well as to assist the program office in developing programs to control this problem. OPA also will assist states in developing better priority setting and UST classification schemes, and in developing tools to improve corrective action decisionmaking. In each of these areas, OPA will refine the tools and methodologies developed in 1989 to improve their usefulness in a different state or local setting, expand upon their current applications to include new ones (e.g., from reactive to proactive priority setting), and evaluate how best to implement, deliver and distribute these to states and possibly local communities.

1989 Program

In 1988, the Agency is allocating a total of \$310,000 supported by 1.0 total workyear for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation.

OPA is continuing its participation on two workgroups--Financial Responsibility Requirements (FRR) for Petroleum USTs and FRRs for Chemical USTs; and is presently assisting the program with the implementation of the Technical Standards Rule. With emphasis shifting from policy development to implementation, it is actively assisting the program office in the analysis and evaluation of broad regulatory and LUST Trust Fund issues and is playing an active role in the development of a report to Congress on exempt farm and heating oil tanks. OPA also continues to implement its LUST workplan, which covers a broad set of issues. These include ground-water protection issues, such as analysis of class systems and corrective action decision-making

process; and implementation analysis, such as facilitating risk-based decisionmaking in the field and data/management tools for state UST Programs. OPA also plans to initiate general policy studies, including measuring the LUST program's environmental results.

1988 Accomplishments

In 1988, the Agency obligated a total of \$283,100 supported by 0.6 total workyear for this program, all of which was from the Leaking Underground Storage Tank Trust Fund appropriation. With the resources, OPA continued to identify and analyze major issues associated with the implementation of the LUST Trust Fund.

ADMINISTRATIVE MANAGEMENT - HEADQUARTERS

1990 Program Request

The Agency requests a total of \$1,200,200 supported by 9.0 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents a decrease of \$174,100 and 1.0 total workyear from 1989. These resources will be used to provide support costs such as rent, utilities, security and mail operation for the LUST program and administrative services, such as contracts, grants, health and safety, environmental compliance, personnel support, and basic financial services such as processing payroll and vouchers and producing accurate financial reports will also be provided.

1989 Program

In 1989, the Agency is allocating a total of \$1,374,300 supported by 10.0 total workyears for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation. These resources are used to provide support services, financial services and administrative services as described above.

1988 Accomplishments

In 1988, the Agency obligated a total of \$1,037,000 supported by 6.9 total workyears, all of which was from the Leaking Underground Storage Tank Trust Fund appropriation. These resources provided support services, financial services and administrative services described above.

ADMINISTRATIVE MANAGEMENT - REGIONS

1990 Program Request

The Agency requests a total of \$879,000 supported by 7.0 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$165,800 and 2.0 total workyears from 1989. An increase in workyears will support Grant Activities in the Regions. Resources will be used to provide support costs such as rent, utilities, security, and mail operations for the LUST program.

Basic financial services will also be provided, such as processing payroll and vouchers and providing accurate financial reports.

1989 Program

In 1989, the Agency is allocating a total of \$713,200 supported by 5.0 total workyears for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation. These resources are used to provide support services and financial services as described above.

1988 Accomplishments

In 1988, the Agency obligated a total of \$191,100 supported by 1.4 total workyears, all of which was from Leaking Underground Storage Tank Trust Fund appropriation. These resources were used to provide support services and financial services as described above.

LEGAL SERVICES - OFFICE OF GENERAL COUNSEL

1990 Program Request

The Agency requests a total of \$299,300 supported by 5.4 total workyears for this program, all of which will be for the Leaking Underground Storage Tank Trust Fund appropriation. This represents an increase of \$14,500 and no change in total workyears from 1989. The increase reflects increased personnel and support costs.

The resources will provide legal support for the development of guidelines and policies for administration of the Fund, assisting the delegation of authority to the States, supporting cooperative agreements between EPA and States, providing advice and interpretations, and defense of the Agency in legal actions taken against it regarding the Trust Fund.

1989 Program

In 1989, the Agency is allocating a total of \$284,800 supported by 5.4 total workyears for this program, all of which is from the Leaking Underground Storage Tank Trust Fund appropriation.

The request will provide legal support for the development of guidelines and policies for administration of the fund; assist the delegation of authority to the States; support cooperative agreements between EPA and States; and provide advice, interpretations, and defense for the Agency in legal actions taken against it regarding the Trust Fund.

1988 Accomplishments

In 1988, the Agency obligated a total of \$126,500 supported by 3.3 total workyears, all of which was from the Leaking Underground Storage Tank Trust Fund appropriation. Legal support was provided to the development of guidelines and policies through advice, counsel and interpretations.



16. Special Analysis

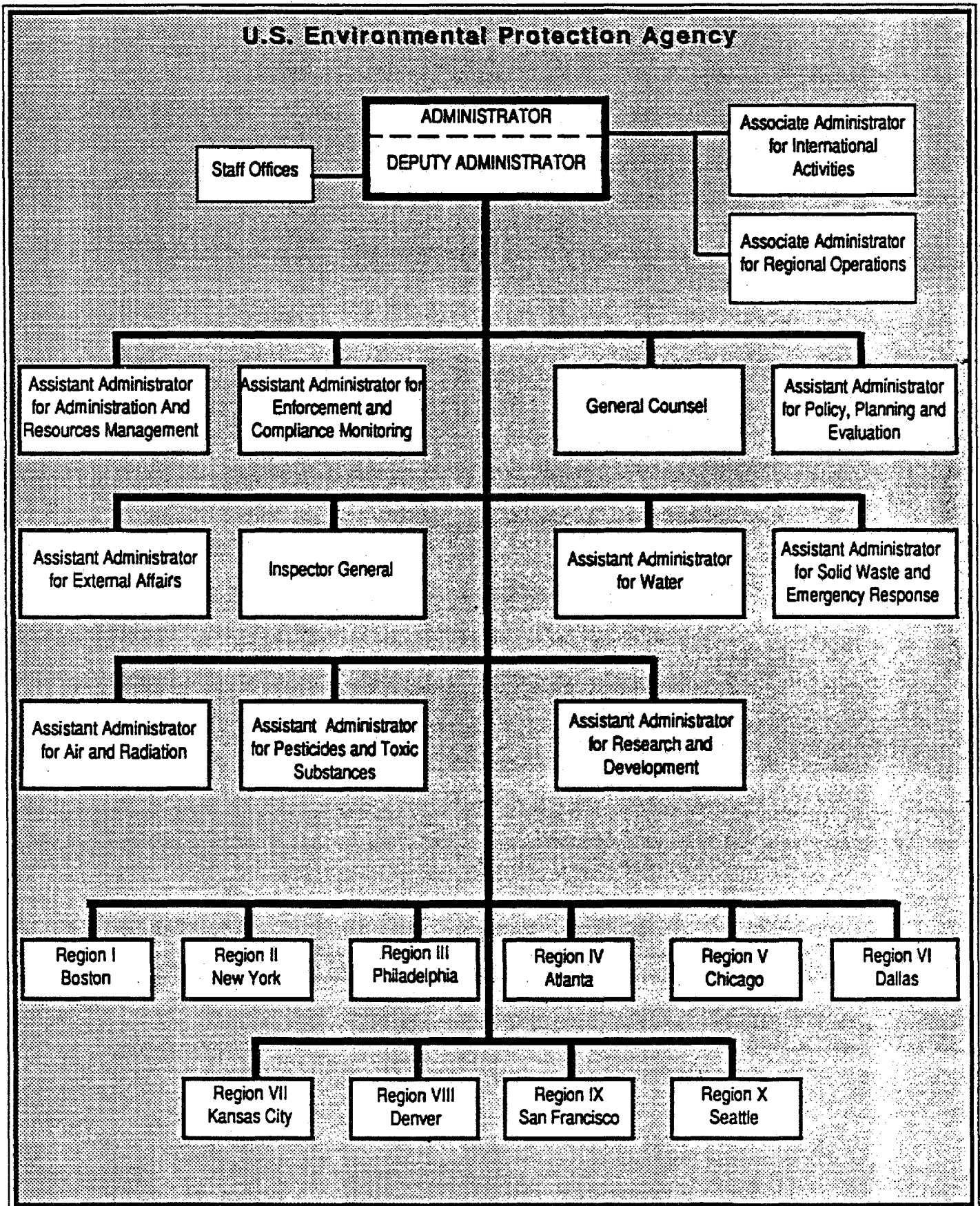
ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSES

Table of Contents

	<u>Page</u>
EPA Organization Chart.....	16-1
EPA Regional Offices - Locations.....	16-2
Summary of Resources, by Appropriation.....	16-3
Summary of Resources, by Media.....	16-7
Object Classification - By Appropriation.....	16-12
Summary of State Grant Resources.....	16-16
Permanent Positions by Grade (Salaries and Expenses).....	16-17
Permanent Positions by Grade (Office of Inspector General)....	16-18
Permanent Positions by Grade (Superfund).....	16-19
Permanent Positions by Grade (LUST Trust Fund).....	16-20
Permanent Positions by Grade (Reimbursables).....	16-21
Average Grade and Salary.....	16-22

ORGANIZATION AND MANAGEMENT





ENVIRONMENTAL PROTECTION AGENCY

REGIONS

Locations and States

Region I	<u>Headquarters, Boston, Massachusetts</u> Connecticut, Maine, Massachusetts New Hampshire, Rhode Island, Vermont
Region II	<u>Headquarters, New York, New York</u> New Jersey, New York, Puerto Rico Virgin Islands
Region III	<u>Headquarters, Philadelphia, PA</u> Delaware, District of Columbia, Maryland Pennsylvania, Virginia, West Virginia
Region IV	<u>Headquarters, Atlanta, Georgia</u> Alabama, Florida, Georgia, Kentucky Mississippi, North Carolina, South Carolina, Tennessee
Region V	<u>Headquarters, Chicago, Illinois</u> Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
Region VI	<u>Headquarters, Dallas, Texas</u> Arkansas, Louisiana, New Mexico, Oklahoma, Texas
Region VII	<u>Headquarters, Kansas City, Kansas</u> Iowa, Kansas, Missouri, Nebraska
Region VIII	<u>Headquarters, Denver, Colorado</u> Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
Region IX	<u>San Francisco, California</u> Arizona, California, Hawaii, Nevada, American Samoa, Guam, Trust Territories of Pacific Islands, Northern Mariana Islands
Region X	<u>Headquarters, Seattle, Washington</u> Alaska, Idaho, Oregon, Washington



ENVIRONMENTAL PROTECTION AGENCY

**Summary of Budget Authority,
Obligations, Outlays, and Workyears
By Appropriation
(dollars in thousands)**

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Increase/ Decrease 1990 Req. vs. Current 1989
	-----	-----	-----	-----	-----
Salaries and Expenses					
Budget Authority.....	\$ 765,000.0	\$ 804,000.0	\$ 804,000.0	\$ 868,582.6	\$ 64,582.6
Obligations.....	761,437.4	804,000.0	804,000.0	868,582.6	64,582.6
Outlays.....	762,502.0	805,024.0	805,024.0	839,991.0	34,967.0
Permanent Workyears.....	10,683.2	11,325.6	11,332.6	11,699.2	366.6
Total Workyears.....	11,482.9	11,740.0	11,743.3	11,699.2	(44.1)
Office of Inspector General (Salaries and Expenses)					
Budget Authority.....	\$ 0.0	\$ 0.0	\$ 0.0	\$ 21,417.4	\$ 21,417.4
Obligations.....	0.0	0.0	0.0	21,417.4	21,417.4
Outlays.....	0.0	0.0	0.0	18,419.0	18,419.0
Permanent Workyears	0.0	0.0	0.0	242.8	242.8
Total Workyears	0.0	0.0	0.0	242.8	242.8
Research and Development					
Budget Authority.....	\$ 186,350.0	\$ 202,500.0	\$ 202,500.0	\$ 235,000.0	\$ 32,500.0
Obligations.....	186,109.4	200,535.4	200,535.4	234,311.0	33,775.6
Outlays.....	203,608.0	198,873.0	198,873.0	221,404.0	22,531.0
Abatement, Control, and Compliance					
Budget Authority.....	\$ 606,192.3	\$ 715,625.0	\$ 715,625.0	\$ 700,000.0	\$ (15,625.0)
Obligations.....	611,357.1	712,913.6	712,913.6	700,258.4	(12,655.2)
Outlays.....	597,721.2	655,374.0	655,374.0	721,344.0	65,970.0
Buildings and Facilities					
Budget Authority.....	\$ 23,500.0	\$ 8,000.0	\$ 16,514.8 *	\$ 8,000.0	\$ (8,514.8)
Obligations.....	18,247.1	16,185.0	16,185.0	8,163.0	(8,022.0)
Outlays.....	9,247.0	12,929.0	12,929.0	18,623.0	5,694.0

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Increase/ Decrease 1990 Req. vs. Current 1989
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Reimbursements-AC&C					
Obligations.....	\$ 0.0	\$ 0.0	\$ 5,000.0	\$ 5,000.0	\$ 0.0
TOTAL, EPA					
Budget Authority.....	\$5,027,442.3	\$5,155,125.0	\$5,320,058.9 *	\$4,883,000.0	\$ (437,058.9)
Obligations.....	5,944,905.1	5,953,113.1	5,963,113.1	5,207,375.4	(755,737.7)
Outlays.....	4,930,054.2	5,235,323.0	5,235,323.0	5,588,370.0	353,047.0
Permanent Workyears.....	13,263.2	14,176.9	14,178.9	14,630.3	451.4
Total Workyears.....	14,263.2	14,722.0	14,720.0	15,130.3	410.3
	=====	=====	=====	=====	=====

* Includes planned prior year funds.

ENVIRONMENTAL PROTECTION AGENCY

Summary of Budget Authority, Obligations, Outlays, and Workyears By Media (dollars in thousands)

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Increase/ Decrease 1990 Req. vs. Current 1989
Air					
Budget Authority.....	\$ 247,351.9	\$ 269,578.8	\$ 268,431.7	\$ 295,464.2	\$ 27,032.5
Obligations.....	248,422.3	266,020.1	264,890.0	291,841.0	26,951.0
Outlays.....	252,725.3	254,008.4	252,920.9	281,987.2	29,066.3
Permanent Workyears.....	1,628.2	1,700.7	1,692.0	1,753.9	61.9
Total Workyears.....	1,717.4	1,741.1	1,731.9	1,753.9	22.0
Water Quality					
Budget Authority.....	\$ 260,545.6	\$ 288,615.7	\$ 286,771.1	\$ 307,902.3	\$ 21,131.2
Obligations.....	257,146.0	290,262.3	288,437.0	310,783.0	22,346.0
Outlays.....	268,124.2	281,887.6	280,095.0	303,722.7	23,627.7
Permanent Workyears.....	1,988.4	2,141.4	2,125.8	2,234.0	108.2
Total Workyears.....	2,151.1	2,236.2	2,219.5	2,234.0	14.5
Drinking Water					
Budget Authority.....	\$ 107,444.2	\$ 108,337.1	\$ 107,802.9	\$ 118,954.6	\$ 11,151.7
Obligations.....	106,990.5	107,563.9	107,037.0	118,244.0	11,207.0
Outlays.....	105,357.4	103,886.0	103,369.2	112,690.6	9,321.4
Permanent Workyears.....	687.6	720.3	716.5	766.7	50.2
Total Workyears.....	746.8	745.5	741.1	766.7	25.6
Hazardous Waste					
Budget Authority.....	\$ 258,952.2	\$ 267,059.4	\$ 264,772.8	\$ 273,703.3	\$ 8,930.5
Obligations.....	256,438.9	268,862.3	266,616.0	277,372.0	10,756.0
Outlays.....	258,469.6	250,186.5	248,053.2	270,319.6	22,266.4
Permanent Workyears.....	1,368.4	1,441.7	1,427.7	1,489.0	61.3
Total Workyears.....	1,460.9	1,505.0	1,491.0	1,489.0	(2.0)

ENVIRONMENTAL PROTECTION AGENCY
 Summary of Budget Authority,
 Obligations, Outlays, and Workyears
 By Appropriation
 (dollars in thousands)

Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Increase/ Decrease 1990 Req. vs. Current 1989
765,000.0	\$ 804,000.0	\$ 804,000.0	\$ 868,582.6	\$ 64,582.6
761,437.4	804,000.0	804,000.0	868,582.6	64,582.6
762,502.0	805,024.0	805,024.0	839,991.0	34,967.0
683.2	11,325.6	11,332.6	11,699.2	366.6
182.9	11,740.0	11,743.3	11,699.2	(44.1)
\$ 0.0	\$ 0.0	\$ 0.0	\$ 21,417.4	\$ 21,417.4
0.0	0.0	0.0	21,417.4	21,417.4
0.0	0.0	0.0	18,419.0	18,419.0
0.0	0.0	0.0	242.8	242.8
0.0	0.0	0.0	242.8	242.8
\$ 202,500.0	\$ 235,000.0	\$ 234,311.0	\$ 32,500.0	\$ 33,775.6
200,535.4	234,311.0	221,404.0	22,531.0	
198,873.0				
1,625.0	\$ 700,000.0	\$ (15,625.0)		
913.6	700,258.4	(12,655.2)		
74.0	721,344.0	65,970.0		
\$ 8,000.0				
8,163.0				
18,623.0				

ENVIRONMENTAL PROTECTION AGENCY

Summary of Budget Authority,
Obligations, Outlays, and Workyears
By Media
(dollars in thousands)

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Increase/ Decrease 1990 Req. vs. Current 1989
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Air					

Budget Authority.....	\$ 247,351.9	\$ 269,578.8	\$ 268,431.7	\$ 295,464.2	\$ 27,032.5
Obligations.....	248,422.3	266,020.1	264,890.0	291,841.0	26,951.0
Outlays.....	252,725.3	254,008.4	252,920.9	281,987.2	29,066.3
Permanent Workyears.....	1,628.2	1,700.7	1,692.0	1,753.9	61.9
Total Workyears.....	1,717.4	1,741.1	1,731.9	1,753.9	22.0
Water Quality					

Budget Authority.....	\$ 260,545.6	\$ 288,615.7	\$ 286,771.1	\$ 307,902.3	\$ 21,131.2
Obligations.....	257,146.0	290,262.3	288,437.0	310,783.0	22,346.0
Outlays.....	268,124.2	281,887.6	280,095.0	303,722.7	23,627.7
Permanent Workyears.....	1,988.4	2,141.4	2,125.8	2,234.0	108.2
Total Workyears.....	2,151.1	2,236.2	2,219.5	2,234.0	14.5
Drinking Water					

Budget Authority.....	\$ 107,444.2	\$ 108,337.1	\$ 107,802.9	\$ 118,954.6	\$ 11,151.7
Obligations.....	106,990.5	107,563.9	107,037.0	118,244.0	11,207.0
Outlays.....	105,357.4	103,886.0	103,369.2	112,690.6	9,321.4
Permanent Workyears.....	687.6	720.3	716.5	766.7	50.2
Total Workyears.....	746.8	745.5	741.1	766.7	25.6
Hazardous Waste					

Budget Authority.....	\$ 258,952.2	\$ 267,059.4	\$ 264,772.8	\$ 273,703.3	\$ 8,930.5
Obligations.....	256,438.9	268,862.3	266,616.0	277,372.0	10,756.0
Outlays.....	258,469.6	250,186.5	248,053.2	270,319.6	22,266.4
Permanent Workyears.....	1,368.4	1,441.7	1,427.7	1,489.0	61.3
Total Workyears.....	1,460.9	1,505.0	1,491.0	1,489.0	(2.0)

ENVIRONMENTAL PROTECTION AGENCY
Permanent Positions By Grade

OFFICE OF THE INSPECTOR GENERAL

Grades	Actual 1988	Current Estimate 1989	Estimate 1990
Executive Level V.			1
Subtotal			1
ES-5			1
ES-4			3
ES-3			2
Subtotal			6
GS/GM-15			20
GS/GM-14			40
GS/GM-13			80
GS-12			61
GS-11			20
GS-10			2
GS-9			19
GS-8			3
GS-7			35
GS-6			8
GS-5			7
GS-4			7
GS-3			1
GS-2			1
Subtotal			304
TOTAL PERMANENT POSITIONS.			311

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Decrease 1990 Req. vs. Current 1989
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Energy					
Budget Authority.....	\$ 55,303.5	\$ 54,968.7	\$ 54,903.2	\$ 38,207.7	\$ (16,695.5)
Obligations.....	55,254.5	54,592.8	54,528.0	37,766.0	(16,762.0)
Outlays.....	57,328.2	59,667.1	59,595.6	52,016.0	(7,579.6)
Permanent Workyears.....	72.0	69.7	68.6	52.4	(16.2)
Total Workyears.....	77.0	69.7	68.6	52.4	(16.2)
Management and Support					
Budget Authority.....	\$ 335,221.4	\$ 367,918.6	\$ 372,957.8	\$ 423,000.8 *	\$ 50,043.0
Obligations.....	333,951.7	368,217.9	373,174.0	423,332.4	50,158.4
Outlays.....	334,689.1	368,449.3	373,250.6	415,768.7	42,518.1
Permanent Workyears.....	2,605.3	2,730.9	2,771.3	2,971.9	200.6
Total Workyears.....	2,845.4	2,878.0	2,917.7	2,971.9	54.2
Buildings and Facilities					
Budget Authority.....	\$ 23,500.0	\$ 8,000.0	\$ 16,514.8 **	\$ 8,000.0	\$ (8,514.8)
Obligations.....	18,247.1	16,185.0	16,185.0	8,163.0	(8,022.0)
Outlays.....	9,247.0	12,929.0	12,929.0	18,623.0	5,694.0
SUBTOTAL, OPERATING PROGRAMS					
Budget Authority.....	\$1,581,042.3	\$1,730,125.0	\$1,738,639.8 **	\$ 1,833,000.0 *	\$ 94,360.2
Obligations.....	1,577,730.6	1,733,634.0	1,733,634.0	1,832,732.4	99,098.4
Outlays.....	1,573,120.2	1,672,413.0	1,672,413.0	1,820,107.0	147,694.0
Permanent Workyears.....	10,683.2	11,325.6	11,332.6	11,942.0	609.4
Total Workyears.....	11,482.9	11,740.0	11,743.3	11,942.0	198.7
Hazardous Substance Superfund					
Budget Authority.....	\$1,128,000.0	\$1,425,000.0	\$1,579,093.2 **	\$ 1,750,000.0 ***	\$ 170,906.8
Obligations.....	1,497,370.3	1,579,093.2	1,579,093.2	1,750,000.0	170,906.8
Outlays.....	828,912.0	1,150,000.0	1,150,000.0	1,375,000.0	225,000.0
Permanent Workyears.....	2,451.9	2,706.7	2,701.7	2,535.0	(166.7)
Total Workyears.....	2,642.2	2,830.0	2,824.7	3,035.0	210.3

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Increase/ Decrease 1990 Req. vs. Current 1989
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LUST Trust Fund					
Budget Authority.....	\$ 14,400.0	\$ 50,000.0	\$ 52,325.9 **	\$ 100,000.0	\$ 47,674.1
Obligations.....	41,749.7	52,325.9	52,325.9	100,000.0	47,674.1
Outlays.....	13,838.0	31,820.0	31,820.0	43,260.0	11,440.0
Permanent Workyears.....	65.5	82.6	82.6	91.3	8.7
Total Workyears.....	72.9	90.0	90.0	91.3	1.3
Construction Grants					
Budget Authority.....	\$2,304,000.0	\$1,950,000.0	\$1,950,000.0	\$ 1,200,000.0	\$ (750,000.0)
Obligations.....	2,793,098.0	2,527,000.0	2,527,000.0	1,443,000.0	(1,084,000.0)
Outlays.....	2,514,461.0	2,390,000.0	2,390,000.0	2,350,000.0	(40,000.0)
Operations, Research and Facilities					
Obligations.....	\$ 16.0	\$ 50.0	\$ 50.0	\$ 50.0	\$ 0.0
Outlays.....	-88.0	250.0	250.0	175.0	(75.0)
Tolerances Revolving Fund					
Obligations.....	\$ 933.0	\$ 1,000.0	\$ 1,000.0	\$ 1,000.0	\$ 0.0
Outlays.....	(196.0)	(200.0)	(200.0)	(200.0)	0.0
Misc. Contrib. Funds					
Obligations.....	\$ 15.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 0.0
Outlays.....	7.0	40.0	40.0	28.0	(12.0)
Reregistration & Expedited Processing Revolving Fund					
Obligations.....	\$ 0.0	\$ 5,000.0	\$ 5,000.0	\$ 14,000.0	\$ 9,000.0
Outlays.....	0.0	(9,000.0)	(9,000.0)	0.0	9,000.0
Reimbursements - S&E					
Obligations.....	\$ 20,444.1	\$ 25,000.0	\$ 25,000.0	\$ 26,583.0	\$ 1,583.0
Permanent Workyears.....	62.6	62.0	62.0	62.0	0.0
Total Workyears.....	65.2	62.0	62.0	62.0	0.0

	Actual 1988	Enacted 1989	Current Estimate 1989	Request 1990	Increase/ Decrease 1990 Req. vs. Current 1989
Reimbursements-Superfund					
Obligations.....	\$ 13,548.4	\$ 30,000.0	\$ 30,000.0	\$ 30,000.0	\$ 0.0
Reimbursements-R&D					
Obligations.....	\$ 0.0	\$ 0.0	\$ 5,000.0	\$ 5,000.0	\$ 0.0
Reimbursements-AC&C					
Obligations.....	\$ 0.0	\$ 0.0	\$ 5,000.0	\$ 5,000.0	\$ 0.0
TOTAL, EPA					
Budget Authority.....	\$5,027,442.3	\$5,155,125.0	\$5,320,058.9 **	\$ 4,883,000.0	\$ (437,058.9)
Obligations.....	5,944,905.1	5,953,113.1	5,963,113.1	5,207,375.4	(755,737.7)
Outlays.....	4,930,054.2	5,235,323.0	5,235,323.0	5,588,370.0	353,047.0
Permanent Workyears.....	13,263.2	14,176.9	14,178.9	14,630.3	451.4
Total Workyears.....	14,263.2	14,722.0	14,720.0	15,130.3	410.3

* Includes \$21,417,400 in budget authority and obligations and \$18,419,000 in outlays from the Office of Inspector General appropriation.

** Includes planned prior year funds.

*** Includes \$10,316,900 in budget authority and obligations and \$2,467,000 in outlays from the Office of Inspector General appropriation.

ENVIRONMENTAL PROTECTION AGENCY

Object Classification
Direct Obligations
(dollars in thousands)

	Actual 1988	Current Estimate 1989	Request 1990	Increase/ decrease 1990 Req. vs Current 1989
Salaries and Expenses				
Personnel Services.....	\$ 505,991.9	\$ 523,248.0	\$ 519,923.9	\$ (3,324.1)
Other objects:				
21.0 Travel and trans- portation of persons.....	20,979.6	23,365.6	25,937.8	2,572.2
22.0 Transportation of things.	2,253.9	4,738.3	7,243.9	2,505.6
23.1 Rental payments to GSA...	44,636.1	53,915.9	60,368.2	6,452.3
23.2 Rental payments to others	13,865.0	16,747.0	18,752.0	2,005.0
23.3 Communications, utilities, and misc. charges.....	26,944.0	32,545.0	36,440.0	3,895.0
24.0 Printing and reproduction	5,469.0	8,529.9	10,066.9	1,537.0
25.0 Other services.....	84,967.2	98,767.6	136,711.8	37,944.2
26.0 Supplies and materials...	13,410.5	13,125.7	15,545.1	2,419.4
31.0 Equipment.....	39,082.4	25,332.5	35,597.4	10,264.9
32.0 Land and structures.....	234.8	1.0	0.0	(1.0)
41.0 Grants, subsidies, and contributions.....	3,517.9	3,675.5	1,995.6	(1,679.9)
42.0 Insurance, claims, and indemnities.....	85.1	8.0	0.0	(8.0)
subtotal, other objects...	255,445.5	280,752.0	348,658.7	67,906.7
Total obligations.....	761,437.4	804,000.0	868,582.6	64,582.6
Office of the Inspector General				
Personnel Services.....	0.0	0.0	12,250.0	12,250.0
Other objects:				
21.0 Travel and trans- portation of persons.....	0.0	0.0	1,798.0	1,798.0
23.1 Rental payments to GSA...	0.0	0.0	1,234.0	1,234.0

	Actual 1988	Current Estimate 1989	Request 1990	Increase/ decrease 1990 Req. vs Current 1989
23.3 Communications, utilities, and misc. charges.....	0.0	0.0	1,129.0	1,129.0
25.0 Other services.....	0.0	0.0	15,323.0	15,323.0
subtotal, other objects...	0.0	0.0	19,484.0	19,484.0
Total obligations (OIG)....	0.0	0.0	31,734.0	31,734.0

Research and Development

25.0 Other services.....	\$ 119,956.0	\$ 117,106.0	\$ 139,201.0	\$ 22,095.0
31.0 Equipment.....	3,014.0	1,672.0	12,348.0	10,676.0
41.0 Grants, subsidies, and contributions.....	63,139.0	81,757.0	82,762.0	1,005.0
Total obligations.....	186,109.0	200,535.0	234,311.0	33,776.0

Abatement, Control, and Compliance

21.0 Travel and trans- portation of persons.....	\$ 278.0	\$ 327.0	\$ 596.0	\$ 269.0
22.0 Transportation of things.	29.0	7.0	4.0	(3.0)
23.3 Communications, utilities, and misc. charges.....	183.0	2.0	0.0	(2.0)
24.0 Printing and reproduction	214.0	10.0	6.0	(4.0)
25.0 Other services.....	229,032.0	335,317.0	341,584.0	6,267.0
26.0 Supplies and materials...	25.0	3.0	1.0	(2.0)
31.0 Equipment.....	625.0	3.0	1,960.0	1,957.0
33.0 Investments and loans....	15,400.0	31,500.0	0.0	(31,500.0)
41.0 Grants, subsidies, and contributions.....	365,571.0	345,745.0	356,107.0	10,362.0
Total obligations.....	611,357.0	712,914.0	700,258.0	(12,656.0)

Buildings and Facilities

21.0 Travel and trans- portation of persons.....	\$ 94.0	\$ 98.0	\$ 218.0	\$ 120.0
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	Actual 1988	Current Estimate 1989	Request 1990	Increase/ decrease 1990 Req. vs Current 1989
22.0 Transportation of things.	4.0	0.0	0.0	0.0
25.0 Other services.....	6,189.0	6,188.0	7,435.0	1,247.0
26.0 Supplies and materials...	9.0	0.0	0.0	0.0
31.0 Equipment.....	212.0	0.0	0.0	0.0
32.0 Land and structures.....	11,739.0	9,899.0	510.0	(9,389.0)
Total obligations (B&F)....	18,247.0	16,185.0	8,163.0	(8,022.0)

Hazardous Substance Superfund

Personnel Services..... \$ 108,957.0 \$ 117,858.0 \$ 120,687.0 \$ 2,829.0

Other objects:

21.0 Travel and trans- portation of persons.....	9,154.0	10,035.0	11,325.0	1,290.0
22.0 Transportation of things.	597.0	1,819.0	1,022.0	(797.0)
23.1 Rental payments to GSA...	10,039.0	11,654.0	12,005.0	351.0
23.2 Rental payments to others	2,144.0	2,489.0	2,564.0	75.0
23.3 Communications, utilities, and misc. charges.....	6,037.0	7,008.0	7,219.0	211.0
24.0 Printing and reproduction	839.0	2,006.0	1,706.0	(300.0)
25.0 Other services.....	1,078,094.0	1,076,840.0	1,178,061.0	101,221.0
26.0 Supplies and materials...	3,085.0	4,645.0	3,534.0	(1,111.0)
31.0 Equipment.....	15,252.0	22,884.0	20,099.0	(2,785.0)
32.0 Land and structures.....	35.0	0.0	0.0	0.0
41.0 Grants, subsidies, and contributions.....	213,291.0	270,884.0	330,540.0	59,656.0
42.0 Insurance, claims, and indemnities.....	139.0	50.0	0.0	(50.0)

subtotal, other objects... 1,338,706.0 1,410,314.0 1,568,075.0 157,761.0

Subtotal direct obligations.. 1,447,663.0 1,528,172.0 1,688,762.0 160,590.0

ALLOCATION ACCOUNTS

Personnel Services..... 8,086.0 8,283.0 8,283.0 0.0

Other objects:

21.0 Travel and trans- portation of persons.....	1,334.0	1,367.0	1,367.0	0.0
22.0 Transportation of things.	109.0	112.0	112.0	0.0
23.1 Rental payments to GSA...	32.0	33.0	33.0	0.0

	Actual 1988	Current Estimate 1989	Request 1990	Increase/ decrease 1990 Req. vs Current 1989
23.3 Communications, utilities, and misc. charges.....	198.0	203.0	203.0	0.0
24.0 Printing and reproduction	73.0	75.0	75.0	0.0
25.0 Other services.....	32,177.0	32,961.0	32,961.0	0.0
26.0 Supplies and materials...	224.0	229.0	229.0	0.0
31.0 Equipment.....	1,624.0	1,664.0	1,664.0	0.0
41.0 Grants, subsidies, and contributions.....	5,851.0	5,994.0	5,994.0	0.0
subtotal, allocation accts.	49,708.0	50,921.0	50,921.0	0.0
Reimbursable obligations.....	13,548.0	30,000.0	30,000.0	0.0
Total obligations.....	1,510,919.0	1,609,093.0	1,769,683.0	160,590.0

LUST Trust Fund

Personnel Services..... \$ 2,924.0 \$ 3,936.0 \$ 3,001.0 \$ (935.0)

Other objects:

21.0 Travel and trans- portation of persons.....	188.0	197.0	485.0	288.0
22.0 Transportation of things.	8.0	14.0	11.0	(3.0)
23.1 Rental payments to GSA...	326.0	401.0	403.0	2.0
23.2 Rental payments to others	49.0	60.0	61.0	1.0
23.3 Communications, utilities, and misc. charges.....	55.0	68.0	68.0	0.0
24.0 Printing and reproduction	5.0	39.0	139.0	100.0
25.0 Other services.....	3,081.0	4,362.0	5,060.0	698.0
26.0 Supplies and materials...	18.0	106.0	228.0	122.0
31.0 Equipment.....	215.0	316.0	339.0	23.0
41.0 Grants, subsidies, and contributions.....	34,881.0	42,827.0	90,205.0	47,378.0
subtotal, other objects...	38,826.0	48,390.0	96,999.0	48,609.0
Total obligations (LUST)...	41,750.0	52,326.0	100,000.0	47,674.0

ENVIRONMENTAL PROTECTION AGENCY

Summary of State Grant Resources
(in thousands of dollars)

	<u>ACTUAL</u> <u>1988</u>	<u>CURRENT</u> <u>ESTIMATE</u> <u>1989</u>	<u>ESTIMATE</u> <u>1990</u>	<u>INCREASE +</u> <u>DECREASE -</u> <u>1990 VS 1989</u>
<u>AIR</u>				
Section 105	\$94,164.0	\$101,500.0	\$99,700.0	-\$1,800.0
<u>WATER QUALITY</u>	60,915.4	79,600.0	85,200.0	+5,600.0
Section 106	60,915.4	67,100.0	83,200.0	+16,100.0
Clean Lakes	---	12,500.0	2,000.0	-10,500.0
<u>DRINKING WATER</u>	47,747.1	46,950.0	51,950.0	+5,000.0
Public Water Systems				
Program Grants	33,424.4	33,450.0	40,450.0	+7,000.0
Underground Injection				
Control Program	11,322.8	10,500.0	10,500.0	---
Special Studies & Demos . .	2,999.9	3,000.0	1,000.0	-2,000.0
<u>HAZARDOUS WASTE</u>	75,703.7	75,020.0	79,000.0	+3,980.0
Hazardous Waste				
Management	68,593.7	66,020.0	70,000.0	+3,980.0
Underground Storage Tanks .	7,110.0	9,000.0	9,000.0	---
<u>PESTICIDES</u>	12,951.5	12,803.4	25,303.4	+12,500.0
Pesticide Enforcement				
Grants	8,936.3	8,803.4	12,803.4	+4,000.0
Pesticide Certification				
& Training	4,015.2	4,000.0	---	+4,000.0
Pesticides Program				
Implementation	---	---	12,500.0	+12,500.0
<u>TOXIC SUBSTANCES</u>				
Toxics Enforcement				
Grants	2,271.1	2,200.0	3,200.0	+1,000.0
 SUBTOTAL	\$293,752.8	\$318,073.4	\$344,353.4	+\$26,280.0
<u>CONSTRUCTION GRANTS</u>	2,793,098.2	1,950,000.0	1,200,000.0	-750,000.0
 TOTAL	\$3,086,851.0	\$2,268,073.4	\$1,544,353.4	-\$723,720.0

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY

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ENVIRONMENTAL PROTECTION AGENCY
Permanent Positions By Grade

SALARIES AND EXPENSES

<u>Grades</u>	<u>Actual</u> <u>1988</u>	<u>Current</u> <u>Estimate</u> <u>1989</u>	<u>Estimate</u> <u>1990</u>
Executive Level II	1	1	1
Executive Level IV	8	10	10
Executive Level V.	1	1	...
Subtotal	10	12	11
ES-6	3	3	3
ES-5	34	36	35
ES-4	83	89	86
ES-3	73	78	76
ES-2	13	14	14
ES-1	11	12	12
Subtotal	217	232	226
GS-17.	1	1	1
GS-16.	11	11	12
GS/GM-15	635	645	667
GS/GM-14	1,354	1,375	1,421
GS/GM-13	2,007	2,038	2,107
GS-12.	2,027	2,059	2,128
GS-11.	1,087	1,104	1,141
GS-10.	66	67	69
GS-9	827	840	868
GS-8	192	195	202
GS-7	922	937	976
GS-6	523	531	549
GS-5	654	664	687
GS-4	297	302	312
GS-3	46	48	48
GS-2	7	7	7
GS-1
Subtotal	10,656	10,824	11,195
Positions established by act of July 1, 1974 (42 U.S.C. 207):			
Director grade 06, \$33,878 to \$58,526. . .	62	62	62
Senior grade 05, \$27,095 to \$47,751. . .	98	98	98
Full grade 04, \$22,841 to \$39,930. . . .	39	39	39
Assistant grade 03, \$21,226 to \$34,534 . .	8	8	8
Subtotal	207	207	207
Positions established by act of November 16, 1977 (42 U.S.C. 201) compensation for which is not to exceed the maximum rate payable for a GS-18.			
	7	7	7
<u>Ungraded</u>	50	51	53
TOTAL PERMANENT POSITIONS.	11,147	11,333	11,699

ENVIRONMENTAL PROTECTION AGENCY
Permanent Positions By Grade

OFFICE OF THE INSPECTOR GENERAL

Grades	Actual 1988	Current Estimate 1989	Estimate 1990
Executive Level V.			1
Subtotal			1
ES-5	1
ES-4	3
ES-3	2
Subtotal			6
GS/GM-15	20
GS/GM-14	40
GS/GM-13	80
GS-12	61
GS-11	20
GS-10	2
GS-9	19
GS-8	3
GS-7	35
GS-6	8
GS-5	7
GS-4	7
GS-3	1
GS-2	1
Subtotal			304
TOTAL PERMANENT POSITIONS.			311

ENVIRONMENTAL PROTECTION AGENCY
Permanent Positions By Grade

HAZARDOUS SUBSTANCE SUPERFUND

<u>Grades</u>	<u>Actual 1988</u>	<u>Current Estimate 1989</u>	<u>Estimate 1990</u>
ES-5	1	3	3
ES-4	5	7	7
ES-3	7	8	8
ES-2	2	8	8
ES-1	3	4	4
Subtotal	18	30	30
GS/GM-15	72	81	74
GS/GM-14	194	218	198
GS/GM-13	460	516	471
GS-12	645	725	660
GS-11	293	329	300
GS-10	1	1	1
GS-9	192	215	196
GS-8	12	13	12
GS-7	148	166	151
GS-6	71	80	73
GS-5	157	176	161
GS-4	101	113	103
GS-3	17	19	17
GS-2	3	3	3
Subtotal	2,366	2,655	2,420
Positions established by act of July 1, 1974 (42 U.S.C. 207):			
Director grade 06, \$33,878 to \$58,526 . . .	6	6	6
Senior grade 05, \$27,095 to \$47,751 . . .	4	4	4
Full grade 04, \$22,841 to \$39,930	5	5	5
Assistant grade 03, \$21,226 to \$34,534 . .	2	2	2
Subtotal	17	17	17
TOTAL PERMANENT POSITIONS	2,401	2,702	2,467

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ENVIRONMENTAL PROTECTION AGENCY
Permanent Positions By Grade

REIMBURSABLES
(SALARIES AND EXPENSES)

<u>Grades</u>	<u>Actual 1988</u>	<u>Current Estimate 1989</u>	<u>Estimate 1990</u>
GS/GM-15	3	3	3
GS/GM-14	3	3	3
GS/GM-13	4	4	4
GS-12	10	11	11
GS-11	6	6	6
GS-10	2	2	2
GS-9	9	9	9
GS-8	5	5	5
GS-7	2	2	2
GS-6	4	4	4
GS-5	5	5	5
Subtotal	53	54	54
Positions established by act of July 1, 1974 (42 U.S.C. 207):			
Director grade 06, \$33,878 to \$58,526. . .	6	6	6
Senior grade 05, \$27,095 to \$47,751. . .	2	2	2
Subtotal	8	8	8
TOTAL PERMANENT POSITIONS.	61	62	62



ENVIRONMENTAL PROTECTION AGENCY

Average Grade and Salary

<u>Appropriation/Pay Plan</u>	<u>Actual 1988</u>	<u>Current Estimate 1989</u>	<u>Estimate 1990</u>
Salaries and Expenses			
Average ES Salary.	\$72,643	\$74,163	\$77,203
Average GS/GM Grade.	10.8	10.8	10.8
Average GS/GM Salary	\$36,627	\$38,000	\$39,558
Average Salary of Ungraded Positions . . .	\$13,698	\$14,211	\$14,793
Office of the Inspector General			
Average ES Salary.	---	---	\$76,888
Average GS/GM Grade.	---	---	11.3
Average GS/GM Salary	---	---	\$39,910
Superfund			
Average ES Salary.	\$71,209	\$73,879	\$73,879
Average GS/GM Grade.	10.7	10.7	10.7
Average GS/GM Salary	\$34,298	\$35,584	\$37,042
Leaking Underground Storage Tank			
Average ES Salary.			
Average GS/GM Grade.	11.0	10.4	10.1
Average GS/GM Salary	\$34,425	\$35,715	\$37,179
Reimbursables			
Average GS/GM Grade.	10.0	10.0	10.0
Average GS/GM Salary	\$32,571	\$33,793	\$35,177
TOTAL AGENCY AVERAGE			
Average ES Salary.	\$71,926	\$74,306	\$75,500
Average GS/GM Grade.	10.8	10.7	10.8
Average GS/GM Salary	\$34,480	\$35,773	\$37,239
Average Salary of Ungraded Positions . . .	\$13,698	\$14,211	\$14,793

