U.S. ENVIRONMENTAL PROTECTION AGENCY

**FY 1992 CONGRESSIONAL JUSTIFICATION DOCUMENT - ERRATA SHEET**

Page 1-1, Budget Summary, the operating programs subtotals are incorrect.

Page 16-4, Special Analyses, the operating programs subtotals are incorrect.

Correct subtotals:

| | Actual 1990 | Enacted 1991 | Current Estimate 1991 | Request 1992 | Increase/ decrease 1992 Req. vs Current 1991 |
|---|---|---|---|---|---|
| SUBTOTAL, OPERATING PROGRAMS | | | | | |
| Budget Authority..... | $1,938,220.0 | $2,313,125.0 | $2,313,125.0 | $2,476,705.0 | $ 163,580.0 |
| Obligations..... | 1,947,947.2 | 2,319,453.0 | 2,319,453.0 | 2,475,233.0 | 155,780.0 |
| Outlays..... | 1,742,212.0 | 2,127,422.0 | 2,127,422.0 | 2,288,711.0 | 161,289.0 |
| Permanent Workyears..... | 11,036.5 | 12,616.3 | 12,616.3 | 13,519.3 | 903.0 |
| Total Workyears..... | 11,648.9 | 12,911.4 | 12,911.4 | 13,519.3 | 607.9 |

**ENVIRONMENTAL PROTECTION AGENCY**

**1992 Budget Estimate**

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**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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1992 Budget Estimate

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# 1. SUMMARY

**ENVIRONMENTAL PROTECTION AGENCY**

**1992 Budget Estimate**

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ENVIRONMENTAL PROTECTION AGENCY

Justification of Appropriations Estimates for the Committee on Appropriations

FISCAL YEAR 1992

BUDGET SUMMARY

The President's 1992 Budget request for the Environmental Protection Agency totals $6,211,705,000 supported by 17,622 workyears. These resources include $2,476,705,000 and 13,519 workyears for the Agency's environmental operating programs; $41,200,000 and 366 workyears for the Inspector General's activities; $1,750,000,000 and 3,602 workyears for the Superfund program; $85,000,000 and 90 workyears for the Leaking Underground Storage Tank (LUST) program; and, $1,900,000,000 for the Construction Grants program. When compared with the Agency Total current estimate, the President's request represents an overall increase of $117,351,800 and 840 total workyears. The following chart provides a summary of budget authority for EPA's eight appropriations:

Budget Authority
(dollars in thousands)

| | 1991 Enacted | 1991 Current Estimate | 1992 President Request | Increase/ Decrease- 1991 vs. 1992 |
|---|---|---|---|---|
| Salaries & Expenses.... | $974,700.0 | $974,700.0 | $1,090,000.0 | $115,300.0 |
| Office of the Inspt. General.. | $37,000.0 | $37,000.0 | $41,200.0 | $4,200.0 |
| Research & Development... | $254,900.0 | $254,900.0 | $313,000.0 | $58,100.0 |
| Abatement, Control & Compl. | $1,006,525.0 | $1,006,525.0 | $1,019,505.0 | $12,980.0 |
| Buildings & Facilities... | $40,000.0 | $40,000.0 | $13,000.0 | $27,000.0 |
| **OPERATING PROGRAMS SUBTOTAL...** | $2,313,125.0 | $2,313,125.0 | $2,476,705.0 | $105,480.0 |
| Hazardous Sub. Superfund.... | $1,616,228.0 | $1,616,228.0 | $1,750,000.0 | $133,772.0 |
| LUST Trust Funds... | $65,000.2 | 65,000.2 | $85,000.0 | $19,999.8 |
| Construction Grants.... | $2,100,000.0 | $2,100,000.0 | $1,900,000.0 | $200,000.0 |
| **AGENCY TOTAL** | $6,094,353.2 | $6,094,353.2 | $6,211,705.0 | $117,351.8 |

## APPROPRIATIONS HIGHLIGHTS

The 1992 President's Budget Request for the Environmental Protection Agency meets the President's commitment to improving environmental protection. The Agency's budget emphasizes stronger ecological protection by targeting resources to local ecosystems, specific regional geographic areas, the country's coastal ecosystems, and the global climate. Resources will be directed at strengthening the Agency's scientific knowledge base and analytic capabilities in support of sound policy and management integrity. In 1992, the Agency will also take several steps to strengthen its efforts toward food safety, and the commitment to the reduction of lead exposure in the environment. Resources are also included for environmental literacy to promote a continued effective dialogue on national environmental issues. The Agency's Superfund program will continue implementation of the Superfund Management Review, and will focus resources to oversee the cleanup at Federal facility sites. Also, the Agency's Construction Grants program will continue the Administration's strong support for capitalization of State Revolving Funds.

The following briefly describes the 1992 request, the purpose, and the major changes from the Agency's 1991 estimates for each of EPA's eight appropriations.

### SALARIES AND EXPENSES

The Agency's 1992 request of $1,090,000,000 represents an increase of $115,300,000 (12%) over the 1991 current estimate for Salaries and Expenses. This appropriation finances all staff costs associated with administering the environmental operating programs within the Agency's Regional and Headquarters operations. The increase in resources will enable the Agency to continue expanding the Administration's commitment to protecting human health and the environment. These resources incorporate all costs exclusive of grant programs and program-specific contractual agreements.

### RESEARCH AND DEVELOPMENT

For 1992 EPA is requesting $313,000,000 for the Research and Development Appropriation, an increase of $58,000,000 (23%) over the 1991 current estimate. This appropriation finances research contracts, grants and agreements with universities and private industry, as well as in-house activities, to produce the scientific knowledge and technologies necessary for regulating, preventing and abating pollution. Increases are provided in 1992 in air research for the 1990 Clean Air Act Amendments and the U.S. Global Climate Change Research Program; water quality research for the Great Lakes initiative, and wetlands; hazardous waste research on bio-remediation and municipal solid waste; and to enhance risk-based media research to strengthen the Agency's research program.

### ABATEMENT, CONTROL AND COMPLIANCE

The Agency is requesting $1,019,505,000 for the Abatement, Control and Compliance appropriation, an increase of $12,980,000 (1%) over the 1991 current estimate. This appropriation finances contracts, grants, and cooperative agreements for pollution abatement, control and compliance activities. The 1992 request includes resources to implement the Clean Air Act Amendments of 1990, continue the wetlands grant program, ground water protection programs, and

provide technical assistance and outreach to States and localities. Specific investments include pollution prevention, the Great Lakes multimedia strategy, and other strategic investments that will result in significant environmental returns.

BUILDINGS AND FACILITIES

The Agency is requesting $13,000,000 for the Buildings and Facilities appropriation. This represents a decrease of $27,000,000 (68%) below the 1991 current estimate which is due to the initiation of two one-time projects in 1991. 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.

HAZARDOUS SUBSTANCE SUPERFUND

This appropriation finances responses at uncontrolled hazardous waste sites and emergency releases of hazardous substances. The President's 1992 Budget request of $1,750,000,000 for Superfund represents an increase of $133,772,000 (8%) over the 1991 current estimate. This increase represents a strong and continued commitment on the part of the Agency to met its responsibilities to protect human health and the environment.

In 1992, the Agency will emphasize Federally-funded cleanup and support for greater potentially responsible party (PRP) accountability in final construction as more sites move to the cleanup stages. Therefore, increased resources will be dedicated to Response cleanup activities. Increases for the Superfund Enforcement program will support the continued integration of PRP identification early in the site cleanup process and a higher number of ongoing court actions. The Department of Justice will receive $32.3 million to ensure adequate support the steadily increasing Superfund caseload.

LEAKING UNDERGROUND STORAGE TANKS (LUST)

The Agency is requesting $85,000,000 in 1992, an increase of $20,000,000 (30%) above the 1991 current estimate. This appropriation established a response program for the prevention and remediation of releases from leaking underground petroleum storage tanks. For 1992, the Agency continues to "build state capacity and partnerships" by providing cooperative agreements to States and territories to help them develop and implement their own LUST programs.

CONSTRUCTION GRANTS

The 1992 budget request is $1,900,000,000, a decrease of $200,000,000 (9.5%) below the 1991 current estimate. The 1992 request for Construction Grants includes the authorized level of $1,800,000,000 for domestic waste water treatment grants and $100,000,000 for the United States share of the international plant to treat uncontrolled sewage flows from Tijuana, Mexico. This continues the Administrations's commitment to the capitalization of state revolving funds (SRFs). In addition to capitalizing SRFs, the 1992 request calls for $300 million in grants to bring certain major coastal communities' wastewater

treatment facilities up to a secondary treatment standard. Boston, New York, Seattle, Los Angeles and San Diego will each receive grants for 55% of project costs.

OFFICE OF THE INSPECTOR GENERAL

The Agency is requesting $41,200,000 for the Office of the Inspector General. Of this amount, $14,954,000 is to be derived from the Hazardous Substance Superfund, $623,000 from the Leaking Underground Storage Tanks Trust Fund, and $25,623,000 is derived from the General Fund. This represents an increase of $4,200,000 (11%) above the 1991 current estimate. With this appropriation the Office of the Inspector General will implement the requirements of the Chief Financial Officer Act for Inspector General audits of Agency financial statements and expand audit coverage of Agency contracts. In addition, the Office of the Inspector General will continue conducting internal performance audits, expedite audits of construction grant close outs, and investigate possible fraud and abuse.

Resources from the Superfund Trust Fund will be used to expand audit coverage of critical Superfund contracts and investigations of the Contract Laboratory Program, as well as conduct performance audits and investigations. The LUST Trust Fund resources will support continued contract and management audits and provide for expansion of LUST investigations.

ENVIRONMENTAL PROTECTION AGENCY

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

| | Actual 1990 | Enacted 1991 | Current Estimate 1991 | Request 1992 |
|---|---|---|---|---|
| **Salaries and Expenses** | | | | |
| Budget Authority | $ 864,409.6 | $ 974,700.0 | $ 974,700.0 | $1,090,000.0 |
| Obligations | 860,830.8 | 974,700.0 | 974,700.0 | 1,090,000.0 |
| Outlays | 836,833.0 | 921,656.0 | 921,656.0 | 1,061,889.0 |
| Permanent Workyears | 10,752.4 | 12,265.9 | 12,265.9 | 13,153.0 |
| Total Workyears | 11,361.7 | 12,561.0 | 12,561.0 | 13,153.0 |
| **Office of Inspector General** | | | | |
| Budget Authority | $ 30,903.0 | $ 37,000.0 | $ 37,000.0 | $ 41,200.0 |
| Obligations | 29,739.9 | 37,000.0 | 37,000.0 | 41,200.0 |
| Outlays | 18,536.0 | 26,322.0 | 26,322.0 | 38,954.0 |
| Permanent Workyears | 284.1 | 350.4 | 350.4 | 366.3 |
| Total Workyears | 287.2 | 350.4 | 350.4 | 366.3 |
| **Research and Development** | | | | |
| Budget Authority | $ 229,820.3 | $ 254,900.0 | $ 254,900.0 | $ 313,000.0 |
| Obligations | 229,248.8 | 252,639.0 | 252,639.0 | 311,838.0 |
| Outlays | 213,810.0 | 252,941.0 | 252,941.0 | 276,247.0 |
| **Abatement, Control and Compliance** | | | | |
| Budget Authority | $ 798,435.1 | $1,006,525.0 | $1,006,525.0 | $1,019,505.0 |
| Obligations | 810,572.0 | 1,007,758.0 | 1,007,758.0 | 1,019,195.0 |
| Outlays | 657,897.0 | 893,481.0 | 893,481.0 | 892,941.0 |
| **Buildings and Facilities** | | | | |
| Budget Authority | $ 14,652.0 | $ 40,000.0 | $ 40,000.0 | $ 13,000.0 |
| Obligations | 17,555.7 | 47,356.0 | 47,356.0 | 13,000.0 |
| Outlays | 15,136.0 | 33,022.0 | 33,022.0 | 18,680.0 |

| | Actual 1990 | Enacted 1991 | Current Estimate 1991 | Request 1992 |
|---|---|---|---|---|
| **SUBTOTAL, OPERATING PROGRAMS** | | | | |
| Budget Authority | $1,938,220.0 | $2,313,125.0 | $2,313,125.0 | $2,476,705.0 |
| Obligations | 1,947,947.2 | 2,319,453.0 | 2,319,453.0 | 2,475,233.0 |
| Outlays | 1,742,212.0 | 2,127,422.0 | 2,127,422.0 | 2,288,711.0 |
| Permanent Workyears | 11,036.5 | 12,616.3 | 12,616.3 | 13,519.3 |
| Total Workyears | 11,648.9 | 12,911.4 | 12,911.4 | 13,519.3 |
| **Hazardous Substance Superfund** | | | | |
| Budget Authority | $1,530,228.0 | $1,616,228.0 | $1,616,228.0 | $1,750,000.0 |
| Obligations | 1,602,844.3 | 1,645,398.0 | 1,645,398.0 | 1,750,000.0 |
| Outlays | 1,143,870.0 | 1,361,076.0 | 1,361,076.0 | 1,513,733.0 |
| Permanent Workyears | 3,132.7 | 3,331.3 | 3,331.3 | 3,602.3 |
| Total Workyears | 3,328.0 | 3,467.2 | 3,467.2 | 3,602.3 |
| **LUST Trust Fund** | | | | |
| Budget Authority | $ 74,097.0 | $ 65,000.2 | $ 65,000.2 | $ 85,000.0 |
| Obligations | 74,746.0 | 68,615.0 | 68,615.0 | 85,000.0 |
| Outlays | 59,305.0 | 69,035.0 | 69,035.0 | 90,815.0 |
| Permanent Workyears | 78.3 | 85.1 | 85.1 | 90.4 |
| Total Workyears | 83.4 | 90.4 | 90.4 | 90.4 |
| **Construction Grants** | | | | |
| Budget Authority | $1,948,029.0 | $2,100,000.0 | $2,100,000.0 | $1,900,000.0 |
| Obligations | 2,439,611.9 | 2,511,000.0 | 2,511,000.0 | 1,965,000.0 |
| Outlays | 2,289,945.0 | 2,352,887.0 | 2,352,887.0 | 2,194,175.0 |
| **Ocean Dumping Fund** | | | | |
| Obligations | $ 1,365.9 | $ 1,420.0 | $ 1,420.0 | $ 540.0 |
| Permanent Workyears | 0.0 | 11.4 | 11.4 | 12.0 |
| Total Workyears | 0.0 | 12.0 | 12.0 | 12.0 |
| **Tolerances Revolving Fund** | | | | |
| Obligations | $ 1,000.0 | $ 1,200.0 | $ 1,200.0 | $ 1,200.0 |
| Outlays | (447.0) | (200.0) | (200.0) | (200.0) |

| | Actual 1990 | Enacted 1991 | Current Estimate 1991 | Request 1992 |
|---|---|---|---|---|
| **Misc. Contrib. Funds** | | | | |
| Obligations | $ 0.0 | $ 10.0 | $ 10.0 | $ 10.0 |
| Outlays | 4.0 | 10.0 | 10.0 | 10.0 |
| **Reregistration & Expedited Processing Revolving Fund** | | | | |
| Obligations | $ 25,216.5 | $ 21,866.9 | $ 21,866.9 | $ 0.0 |
| Outlays | (15,471.0) | 11,078.0 | 11,078.0 | 11,011.0 |
| Permanent Workyears | 139.3 | 237.0 | 237.0 | 326.0 |
| Total Workyears | 144.0 | 238.5 | 238.5 | 326.0 |
| **Asbestos in schools fund** | | | | |
| Outlays | $ 0.0 | $ 0.0 | $ 0.0 | $ 26,399.0 |
| **Reimbursements - S&E** | | | | |
| Obligations | $ 20,869.0 | $ 33,580.0 | $ 33,580.0 | $ 36,035.0 |
| Permanent Workyears | 67.3 | 62.0 | 62.0 | 72.0 |
| Total Workyears | 67.4 | 62.0 | 62.0 | 72.0 |
| **Reimbursements - Superfund** | | | | |
| Obligations | $ 4,935.2 | $ 30,000.0 | $ 30,000.0 | $ 30,000.0 |
| **Reimbursements - R&D** | | | | |
| Obligations | $ 4,470.4 | $ 5,000.0 | $ 5,000.0 | $ 5,000.0 |
| **TOTAL, EPA** | | | | |
| Budget Authority | $5,490,574.0 | $6,094,353.2 | $6,094,353.2 | $6,211,705.0 |
| Obligations | 6,123,006.4 | 6,637,542.9 | 6,637,542.9 | 6,348,018.0 |
| Outlays | 5,219,418.0 | 5,921,308.0 | 5,921,308.0 | 6,124,654.0 |
| Permanent Workyears | 14,454.1 | 16,343.1 | 16,343.1 | 17,622.0 |
| Total Workyears | 15,271.7 | 16,781.5 | 16,781.5 | 17,622.0 |

ENVIRONMENTAL PROTECTION AGENCY

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

| | Actual 1990 | Enacted 1991 | Current Estimate 1991 | Request 1992 |
|---|---|---|---|---|
| **Air** | | | | |
| Budget Authority..... | $ 291,888.8 | $ 394,830.2 | $ 394,874.3 | $ 511,787.8 |
| Obligations..... | 291,142.2 | 390,292.3 | 390,336.0 | 504,642.0 |
| Outlays..... | 331,039.5 | 361,695.3 | 361,736.5 | 460,917.0 |
| Permanent Workyears..... | 1,639.6 | 1,935.8 | 1,935.8 | 2,267.9 |
| Total Workyears..... | 1,717.2 | 1,971.0 | 1,971.0 | 2,267.9 |
| **Water Quality** | | | | |
| Budget Authority..... | $ 345,971.1 | $ 418,490.2 | $ 418,531.3 | $ 412,822.1 |
| Obligations..... | 351,525.3 | 418,774.0 | 418,815.8 | 413,302.0 |
| Outlays..... | 270,881.4 | 380,802.2 | 380,840.4 | 376,419.9 |
| Permanent Workyears..... | 2,007.1 | 2,157.0 | 2,157.0 | 2,330.8 |
| Total Workyears..... | 2,131.6 | 2,240.6 | 2,240.6 | 2,330.8 |
| **Drinking Water** | | | | |
| Budget Authority..... | $ 119,281.1 | $ 134,189.0 | $ 134,232.4 | $ 136,148.4 |
| Obligations..... | 119,872.2 | 134,037.7 | 134,081.0 | 135,929.0 |
| Outlays..... | 110,071.8 | 121,473.0 | 121,513.4 | 122,210.1 |
| Permanent Workyears..... | 683.2 | 774.4 | 774.4 | 805.4 |
| Total Workyears..... | 725.0 | 798.7 | 798.7 | 805.4 |
| **Hazardous Waste** | | | | |
| Budget Authority..... | $ 267,352.0 | $ 311,019.1 | $ 310,989.6 | $ 333,735.0 |
| Obligations..... | 274,115.4 | 312,174.7 | 312,145.0 | 334,326.0 |
| Outlays..... | 234,382.5 | 285,317.5 | 285,290.1 | 302,619.2 |
| Permanent Workyears..... | 1,328.9 | 1,574.6 | 1,574.6 | 1,660.0 |
| Total Workyears..... | 1,397.3 | 1,631.8 | 1,631.8 | 1,660.0 |

| | Actual 1990 | Enacted 1991 | Current Estimate 1991 | Request 1992 |
|---|---|---|---|---|
| **Pesticides** | | | | |
| Budget Authority..... | $ 104,784.7 | $ 107,594.3 | $ 107,566.8 | $ 117,063.8 |
| Obligations..... | 96,600.4 | 106,954.4 | 106,927.0 | 116,052.0 |
| Outlays..... | 81,413.9 | 98,930.0 | 98,904.3 | 107,800.8 |
| Permanent Workyears..... | 804.9 | 860.8 | 860.8 | 892.7 |
| Total Workyears..... | 838.0 | 869.7 | 869.7 | 892.7 |
| **Radiation** | | | | |
| Budget Authority..... | $ 34,438.7 | $ 38,956.0 | $ 38,956.0 | $ 39,627.2 |
| Obligations..... | 34,550.3 | 38,680.0 | 38,680.0 | 40,132.0 |
| Outlays..... | 22,332.3 | 35,967.7 | 35,967.6 | 36,370.0 |
| Permanent Workyears..... | 192.6 | 237.1 | 237.1 | 241.2 |
| Total Workyears..... | 202.4 | 240.2 | 240.2 | 241.2 |
| **Noise** | | | | |
| Budget Authority..... | $ 0.0 | $ 0.0 | $ 0.0 | $ 0.0 |
| Obligations..... | 0.0 | 0.0 | 0.0 | 0.0 |
| Outlays..... | 14.6 | 0.0 | 0.0 | 0.0 |
| **Multimedia** | | | | |
| Budget Authority..... | $ 124,875.0 | $ 177,867.9 | $ 177,898.6 | $ 215,010.0 |
| Obligations..... | 125,656.7 | 179,273.0 | 179,304.0 | 216,834.0 |
| Outlays..... | 92,597.3 | 173,348.9 | 173,377.5 | 195,936.8 |
| Permanent Workyears..... | 643.0 | 823.7 | 823.7 | 897.4 |
| Total Workyears..... | 683.7 | 842.4 | 842.4 | 897.4 |
| **Toxic Substances** | | | | |
| Budget Authority..... | $ 156,205.8 | $ 167,076.8 | $ 167,091.8 | $ 119,287.2 |
| Obligations..... | 158,950.6 | 167,720.9 | 167,736.0 | 121,151.0 |
| Outlays..... | 133,472.6 | 153,123.0 | 153,137.0 | 111,554.3 |
| Permanent Workyears..... | 830.6 | 883.5 | 883.5 | 891.9 |
| Total Workyears..... | 859.3 | 895.4 | 895.4 | 891.9 |
| **Energy** | | | | |
| Budget Authority..... | $ 33,351.2 | $ 13,621.8 | $ 13,621.8 | $ 13,672.2 |
| Obligations..... | 33,325.1 | 13,387.0 | 13,387.0 | 13,386.0 |
| Outlays..... | 50,598.1 | 13,437.8 | 13,437.8 | 12,246.9 |

| | Actual 1990 | Enacted 1991 | Current[a] Estimate 1991 | Request 1992 |
|---|---|---|---|---|
| Permanent Workyears..... | 48.5 | 30.4 | 30.4 | 30.4 |
| Total Workyears..... | 49.0 | 30.4 | 30.4 | 30.4 |
| **Management and Support** | | | | |
| Budget Authority..... | $ 435,361.7 | $ 495,798.5 | $ 495,681.2 | $ 548,974.3 |
| Obligations..... | 434,923.8 | 497,121.8 | 497,004.0 | 550,902.0 |
| Outlays..... | 395,820.2 | 460,600.8 | 460,491.6 | 529,264.0 |
| Permanent Workyears..... | 2,797.2 | 3,250.7 | 3,250.7 | 3,401.3 |
| Total Workyears..... | 2,984.4 | 3,302.9 | 3,302.9 | 3,401.3 |
| **Buildings and Facilities** | | | | |
| Budget Authority..... | $ 14,652.0 | $ 40,000.0 | $ 40,000.0 | $ 13,000.0 |
| Obligations..... | 17,555.7 | 47,356.0 | 47,356.0 | 13,000.0 |
| Outlays..... | 15,136.0 | 33,022.0 | 33,022.0 | 18,680.0 |
| **Hazardous Substance Superfund** | | | | |
| Budget Authority..... | $1,540,285.9 | $1,629,334.4 | $1,629,334.4 | $1,764,954.0 |
| Obligations..... | 1,612,573.8 | 1,658,504.4 | 1,658,504.4 | 1,764,954.0 |
| Outlays..... | 1,148,321.8 | 1,370,372.2 | 1,370,372.2 | 1,527,837.0 |
| Permanent Workyears..... | 3,193.6 | 3,416.1 | 3,416.1 | 3,698.1 |
| Total Workyears..... | 3,389.0 | 3,552.0 | 3,552.0 | 3,698.1 |
| **LUST Trust Fund** | | | | |
| Budget Authority..... | $ 74,097.0 | $ 65,575.0 | $ 65,575.0 | $ 85,623.0 |
| Obligations..... | 74,746.0 | 69,189.8 | 69,189.8 | 85,623.0 |
| Outlays..... | 59,305.0 | 69,442.6 | 69,442.6 | 91,403.0 |
| Permanent Workyears..... | 78.3 | 88.6 | 88.6 | 94.9 |
| Total Workyears..... | 83.4 | 93.9 | 93.9 | 94.9 |
| **Construction Grants** | | | | |
| Budget Authority..... | $1,948,029.0 | $2,100,000.0 | $2,100,000.0 | $1,900,000.0 |
| Obligations..... | 2,439,611.9 | 2,511,000.0 | 2,511,000.0 | 1,965,000.0 |
| Outlays..... | 2,289,945.0 | 2,352,887.0 | 2,352,887.0 | 2,194,175.0 |
| **Ocean Dumping Fund** | | | | |
| Obligations..... | $ 1,365.9 | $ 1,420.0 | $ 1,420.0 | $ 540.0 |
| Permanent Workyears..... | 0.0 | 11.4 | 11.4 | 12.0 |
| Total Workyears..... | 0.0 | 12.0 | 12.0 | 12.0 |

| | Actual 1990 | Enacted 1991 | Current Estimate 1991 | Request 1992 |
|---|---|---|---|---|
| **Tolerances Revolving Fund** | | | | |
| Obligations | $ 1,000.0 | $ 1,200.0 | $ 1,200.0 | $ 1,200.0 |
| Outlays | (447.0) | (200.0) | (200.0) | (200.0) |
| **Misc. Contrib. Funds** | | | | |
| Obligations | $ 0.0 | $ 10.0 | $ 10.0 | $ 10.0 |
| Outlays | 4.0 | 10.0 | 10.0 | 10.0 |
| **Reregistration & Expedited Processing Revolving Fund** | | | | |
| Obligations | $ 25,216.5 | $ 21,866.9 | $ 21,866.9 | $ 0.0 |
| Outlays | (15,471.0) | 11,078.0 | 11,078.0 | 11,011.0 |
| Permanent Workyears | 139.3 | 237.0 | 237.0 | 326.0 |
| Total Workyears | 144.0 | 238.5 | 238.5 | 326.0 |
| **Asbestos in schools fund** | | | | |
| Outlays | $ 0.0 | $ 0.0 | $ 0.0 | $ 26,399.0 |
| **Reimbursements - S&E** | | | | |
| Obligations | $ 20,869.0 | $ 33,580.0 | $ 33,580.0 | $ 36,035.0 |
| Permanent Workyears | 67.3 | 62.0 | 62.0 | 72.0 |
| Total Workyears | 67.4 | 62.0 | 62.0 | 72.0 |
| **Reimbursements - Superfund** | | | | |
| Obligations | $ 4,935.2 | $ 30,000.0 | $ 30,000.0 | $ 30,000.0 |
| **Reimbursements - R&D** | | | | |
| Obligations | $ 4,470.4 | $ 5,000.0 | $ 5,000.0 | $ 5,000.0 |
| **TOTAL, EPA** | | | | |
| Budget Authority | $5,490,574.0 | $6,094,353.2 | $6,094,353.2 | $6,211,705.0 |
| Obligations | 6,123,006.4 | 6,637,542.9 | 6,637,542.9 | 6,348,018.0 |
| Outlays | 5,219,418.0 | 5,921,308.0 | 5,921,308.0 | 6,124,654.0 |
| Permanent Workyears | 14,454.1 | 16,343.1 | 16,343.1 | 17,622.0 |
| Total Workyears | 15,271.7 | 16,781.5 | 16,781.5 | 17,622.0 |

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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# AIR

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| APPROPRIATION | | | | | |
| Salaries & Expenses | $97,464.5 | $114,625.6 | $114,669.7 | $138,194.5 | $23,524.8 |
| Abatement Control and Compliance | $142,769.0 | $220,121.7 | $220,121.7 | $289,796.7 | $69,675.0 |
| Research & Development | $50,908.7 | $60,082.9 | $60,082.9 | $83,796.6 | $23,713.7 |
| TOTAL, Air | $291,142.2 | $394,830.2 | $394,874.3 | $511,787.8 | 116,913.5 |
| PERMANENT WORKYEARS | 1,640.1 | 1,935.8 | 1,935.8 | 2,267.9 | 332.1 |
| TOTAL WORKYEARS | 1,717.7 | 1,971.0 | 1,971.0 | 2,267.9 | 296.9 |
| OUTLAYS | $331,039.5 | $361,695.3 | $361,736.5 | $460,917.0 | $99,180.5 |
| AUTHORIZATION LEVELS | Reauthorization for the Clean Air Act expired September 30, 1981. The Clean Air Act Amendments of 1990 reauthorize the Air program at such sums as may be necessary for Fiscal Years 1992 through 1998. | | | | |

# AIR

## OVERVIEW AND STRATEGY

The Clean Air Act authorizes a nationwide program to reduce air pollution through air quality planning, regulation, enforcement, and research. In November 1990 the President signed the Clean Air Act Amendments of 1990, which expanded requirements and capabilities to clean our nation's air. Enactment of the amendments and the President's commitment to the environment have created high public expectations for improving nationwide air quality in the 1990's through cleaner cars, fuels, factories, and powerplants. This budget request would provide resources to respond to the public's rising expectations for cleaner air through the fulfillment of the requirements of the new Clean Air Act. In implementing the Act, EPA will use not only traditional approaches for controlling air pollution, but will also strive to harness the power of the marketplace, encourage local initiatives, and emphasize pollution prevention. In addition to carrying out the new Clean Air Act, EPA will expand its efforts to analyze and address indoor air quality problems.

EPA's goals for 1992 include reducing health and environmental risks through: (1) further empowering states to attain National Ambient Air Quality Standards; (2) establishing new clean vehicle and fuel programs; (3) developing and implementing national air toxic standards; (4) developing state and local operating permit and fee programs; (5) setting up a market-based acid rain emissions trading system; (6) implementing domestic rules and U.S. responsibilities under the revised Montreal Protocol for reducing stratospheric ozone depletion; (7) implementing new enforcement authorities and approaches; (8) increasing technical support to state indoor air programs; and (9) conducting research to provide strong scientific and technical bases for regulatory and nonregulatory programs.

### Attain National Ambient Air Quality Standards

Polluted air creates high health and environmental risks. To protect health and welfare EPA set National Ambient Air Quality Standards for six pollutants: ozone, carbon monoxide, particulate matter (PM-10), lead, sulfur dioxide, and nitrogen dioxide. Nonattainment of the standards is most widespread for the first three pollutants. Today, almost 100 areas in the United States fail to meet the national health standard for ozone; more than 40 areas fail to meet the health standards for carbon monoxide; and over 60 areas exceed the national health standards for PM-10.

The primary mechanisms provided by the Clean Air Act to achieve clean air standards are state implementation plans and Federal rules and guidance. In 1992 EPA will help states develop expanded, more stringent state implementation plans that will further reduce pollutant emissions from both stationary and mobile sources. The Agency will issue guidance for state control strategy demonstrations, provide states with technical aid and guidance for instituting or enhancing mobile and stationary source pollution controls, and encourage the use of market based approaches where appropriate. In 1992 the Agency also will provide increased grants to states, helping them build their capacity to meet the expanded requirements and responsibilities of the 1990 Clean Air Act amendments.

In 1992 EPA will develop national guidelines and standards for major stationary polluters that emit into the air or cause ozone, carbon monoxide, PM-10, lead, and sulfur dioxide. To support state efforts to control stationary sources the Agency will develop control technique guidelines for major pollution source groups. The Agency will also continue to set new source performance standards that apply nationwide. The Agency will emphasize pollution prevention in support of state efforts and development of national standards.

To help states revise their implementation plans to meet new requirements EPA will expand work on emission inventories, assure quality data, and develop tracking procedures. Complete and comprehensive emission inventories are key to the development of sound and enforceable state plans, effective regulations, and meaningful measures of progress for achieving clean air. Accurate and comprehensive emission inventories are also integral to the success of new market-based pollution control approaches.

EPA also will help states upgrade and expand air quality monitoring systems. States will continue an initiative begun in 1991 to systematically replace worn-out air quality monitors. Accurate air quality measurements are essential in developing state plans and evaluating their effectiveness.

Establishing New Clean Vehicles and Fuels Programs

Air pollution from mobile sources accounts for over half of the nationwide emissions of ozone precursors (volatile organic compounds and nitrogen oxides), carbon monoxide, and air toxics. Because mobile source emissions account for such a large percentage of the total air pollution problem, reducing these emissions holds the greatest potential for cleaning our nation's air.

The Clean Air Act Amendments of 1990 require significant changes in vehicle control technologies and fuel types and expansion of state control programs. EPA and the states will work together to carry out an aggressive mobile source pollution abatement program. The new Act requires EPA to adopt about 60 new mobile source rules covering: reformulated gasoline, leaded gasoline, clean alternative fuels, vehicle fleet requirements, vehicle emission standards, and state program requirements. States must establish clean fuels programs and new or enhanced vehicle inspection and maintenance programs.

In 1992 the Agency will promulgate rules for clean fuel vehicle programs and issue standards for vehicles fueled by compressed natural gas. The Agency will also issue rules to reduce vehicle evaporative emissions and to standardize vehicle diagnostic systems that identify component failures causing increased emissions. In addition, EPA will increase support to states for new and enhanced programs for clean fuels and vehicle inspection and maintenance.

Implementing National Air Toxics Standards

According to industry estimates, more than 2.7 billion pounds of toxic pollutants were emitted into the atmosphere in 1987. These emissions may result in a variety of adverse health effects including cancer, reproductive effects, birth defects, and respiratory illness. The Clean Air Act Amendments of 1990 direct EPA to control 189 hazardous air pollutants through technology based standards over the next 10 years.

In 1992 EPA will develop and issue Maximum Achievable Control Technology (MACT) standards for 40 source categories of polluters that account for the most health risk. The new Act amendments require that standards for the 40 categories be established within two years of enactment. During 1992 the Agency will also continue work on MACT standards required in four years. To set MACT standards, EPA must gather information on toxics emissions, manufacturing processes, pollution controls, and control costs. As part of the standards development, the Agency will examine process changes, substitution of feedstocks, and other pollution prevention options. EPA will continue implementation of the early reduction program to accelerate emissions reductions by facilities that would be subject to the next phase of MACT standards.

In 1992 EPA will also address air toxic source groups not covered by the MACT provisions, but included in other new Clean Air Act requirements. These sources include: commercial and industrial solid waste incinerators and medical waste incinerators. EPA will also perform a study of air toxic deposition in the Great Lakes.

Establishing Operating Permit and Fee Programs

The 1990 Clean Air Act amendments provide for state and local operating permit and fee programs to enhance the effectiveness of programs for reducing acid rain, attaining National Ambient Air Quality Standards, and controlling air toxics. When fully implemented, the permit program will consolidate requirements for reducing air emissions and ensure that the regulated community has a clear, consistent picture of applicable rules.

In 1992 EPA will work with state and local agencies to develop operating permit programs. States must submit their permit program plans to EPA by the end of 1993. EPA will issue comprehensive guidance and model permits and undertake outreach and training efforts to help state and local agencies establish their permitting programs.

Establishing a Market Based Acid Rain Emissions Trading System

Acid rain causes damage to lakes, forests, and man-made structures; contributes to reduced visibility; and is suspected of causing damage to human health. The acid rain provisions in the 1990 Clean Air Act amendments will reduce acid rain causing emissions through an innovative market-based emission allowance program that will provide affected sources with flexibility in meeting required emission reductions. The new Act requires a permanent 10 million ton reduction in sulfur dioxide and a two million ton reduction in nitrogen oxides. The acid rain program is already being seen as a model for regulatory reform efforts here and abroad.

In 1992 EPA will issue regulations for the allowance system; publish guidance on allowance trading, sales, and auctions; and initiate operation of the system. The Agency will also issue rules establishing permit requirements for sources entering the allowance trading program, establish an energy conservation and renewable energy technology reserve, and review applications for the reserve. The Agency will take all available steps to facilitate active trading of allowances. A successful allowance trading system will minimize compliance costs, maximize economic efficiency, and allow for growth.

In 1992 EPA will promulgate rules requiring continuous emissions monitoring. The Agency will also publish rules for collecting fees from sources with sulfur dioxide emissions more than their allowances. In addition, the Agency will review permit applications and compliance plans for the first phase of the acid rain program. Finally, the Agency will issue guidance on Federal and state permit programs, alternative nitrogen oxides emissions rates and averaging, and application procedures for clean coal technology projects and elective sources.

Reducing Stratospheric Ozone Depletion

For every one percent drop in the level of stratospheric ozone there will be an additional million cases of skin cancer. The Clean Air Act Amendments of 1990 codify and expand upon the revised Montreal Protocol negotiated to protect the stratosphere and reduce health and environmental risks. The amendments establish deadlines for the complete phase-out of two groups of ozone depleting chemicals.

In 1992 EPA will support international activities for compliance and data reporting for the Montreal Protocol; develop a list of products that contain regulated chemicals; and initiate development of rules to ban the import of these products from countries that are not parties to the Protocol. The Agency will also take further steps to phase out hydrochlorofluorocarbons, as well as other ozone depleting chemicals. In addition, the EPA budget request will provide $20 million in United States support for a multi-lateral fund to help developing countries shift away from ozone depleting chemicals.

To implement the new Clean Air Act amendments, EPA will collect chemical production, importation, and use data for regulated chemicals. The Agency will also review and respond to petitions to speed the phase-out of ozone depleting chemicals and evaluate requests for exemptions from the phase-out schedule. The Agency will continue developing regulations for recycling and will operate a recycling compliance program. In addition, the Agency will enhance its efforts to ensure that substitutes for ozone depleting chemical are safe and environmentally acceptable.

Implementing New Enforcement Authorities

The Clean Air Act Amendments of 1990 restructure, strengthen, and expand both EPA and state enforcement authority. New types of programs, such as the allowance program for ozone-depleting chemicals, the market-based acid rain program, the state operating permit program, and the clean vehicles and fuels program, will require new approaches to enforcement. EPA will also maintain and strengthen existing enforcement capabilities to assure compliance with revised state plans and Federal rules.

In 1992 EPA will help states develop enforceable operating permit, field citation, and administrative penalty programs. EPA will also develop compliance programs to enforce the new chlorofluorocarbon recycling regulation and the oxygenated fuels and reformulated gasoline requirements. In addition, the Agency will assure that large utility steam generating units install the continuous emission monitoring systems needed to accomplish the acid rain program.

EPA will continue to shift enforcement activities to areas of highest potential environmental benefit and stress greater coordination among Regional and state programs.

Addressing Exposure to Indoor Air

According to a Science Advisory Board report, indoor air pollution represents one of the most significant public health risks facing the Agency. In 1992 EPA will begin a national study of indoor air quality in large buildings. The Agency will also start an inventory of indoor emissions to help consumers select lower emitting materials and products for the indoor environment.

EPA will enhance the ability of its Regional offices to help states address indoor air pollution by providing at least one full-time indoor air quality coordinator per Region. In addition, the Agency will expand the capabilities of the Regional training center network to include indoor air quality courses.

Conducting Research to Provide a Strong Scientific and Technical Basis for Regulatory Programs

In 1992, the Office of Research and Development will support the Office of Air and Radiation by providing information on air pollution health and ecological effects, monitoring methods, models, assessments, emission reduction technologies, and quality control. Expanded program activities include increased research on global climate change and work on large building indoor air pollution reduction techniques.

To carry out the requirements of the Clean Air Act Amendments of 1990, the Agency is proposing an enhanced research program covering emissions inventories, ozone nonattainment, air toxics, mobile sources, and acid deposition. The research will cover short and long-term needs including ozone and acid aerosol methods, characterization, and effects; human health effects and characterization of alternative fuels; development of new air toxics risk assessment methods; development of control technologies for volatile organic compounds; and the development of methods and instruments for continuous emissions monitoring and modeling to support acid deposition implementation.

EPA is a member of the U.S. Global Change Research Program which is coordinated by the Committee on Environmental Earth Sciences (CEES). EPA's global change research includes the ability to distinguish between man's impact on climate and natures variability, and evaluating the direction and magnitude of feedbacks from the living planet to climate.

Indoor air research will focus on providing information on different ventilation approaches and other mitigation techniques for improving indoor air quality. This research will include: chamber and field studies to develop and test new techniques for building ventilation, including displacement flow arrangements; and microenvironmental workstations that control ventilation, temperature, humidity, lighting, and noise. Finally, the research program will conduct chamber and field studies of gaseous pollutant removal systems.

Consulting Services

The Office of Air and Radiation will fund a limited amount of consulting services in 1992. Section 117 of the Clean Air Act requires consultation with appropriate advisory committees prior to publishing any New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants. The National Air Pollution Control Techniques Advisory Committee is comprised of members from industry, environmental groups, academia, and state and 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 will be awarded in 1992. The purpose of these contracts will be to provide specialized expertise in environmental economics needed to assess the economic impacts and benefits of various source standards and other regulatory actions. The assessment of economic impacts and benefits is required by Executive Order 12291.

## AIR

| PROGRAM ACTIVITIES | ACTUAL 1990 | CURRENT ESTIMATE 1991 | ESTIMATE 1992 | INCREASE (+) DECREASE (-) 1992 VS 1991 |
|---|---|---|---|---|
| National Ambient Air Quality Standards | | | | |
| Number of Pollutants Covered (Cumulative) . | 6 | 6 | 6 | -- |
| Proposals* . . . . . | 1 | 1 | 0 | -1 |
| Promulgations* . . . . . | 0 | 0 | 2 | +2 |
| New Source Performance Standards | | | | |
| Source Categories Covered (Cumulative) . | 62 | 66 | 67 | +1 |
| Proposals** . . . . . | 2 | 2 | 3 | +1 |
| Promulgations . . . . . | 3 | 4 | 1 | -3 |
| National Emission Standards for Hazardous Air Pollutants | | | | |
| Number of Source Categories Covered (Cumulative) . | 33 | 33 | 78 | +45 |
| Number of Pollutants Covered (Cumulative) . | 7 | 7 | 158 | +151 |
| Proposals** . . . . . | 0 | 0 | 6 | +6 |
| Promulgations . . . . . | 2 | 0 | 0 | -- |
| Enforcement Actions - Stationary Sources | | | | |
| Inspections . . . . . | 2,322 | 2,055 | 2,150 | +95 |
| Notices of Violation . . | 406 | 300 | 310 | +10 |
| Administrative Orders . . | 261 | 207 | 199 | -8 |
| Civil Litigation . . . . | 80 | 80 | 80 | -- |
| Criminal Litigation . . . | 10 | 10 | 10 | -- |
| Enforcement Actions - Mobile Sources | | | | |
| State and Local Tampering/ Fuel Switching Programs (Cumulative) . . . . . | 48 | 52 | 60 | +8 |
| Assembly Line Testing Test Orders . . . . . | 21 | 19 | 19 | -- |
| Recall Investigations . . | 51 | 39 | 42 | +3 |
| Notices of Violation Tampering/Fuel Switching | 203 | 160 | 100 | -60 |

* 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**

1992 Budget Estimate

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AIR
Air Research

| PROGRAM | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| Characterization, Transport And Fate - Air | | | | | |
| Salaries & Expenses | $3,374.2 | $3,559.3 | $3,559.3 | | -$3,559.3 |
| Research & Development | $8,083.8 | $11,042.3 | $11,042.3 | | -$11,042.3 |
| TOTAL | $11,458.0 | $14,601.6 | $14,601.6 | | -$14,601.6 |
| Scientific Assessment - Air | | | | | |
| Salaries & Expenses | $3,262.9 | $3,599.8 | $3,606.0 | $3,546.8 | -$59.2 |
| Research & Development | $2,220.9 | $3,281.5 | $3,281.5 | $3,499.6 | $218.1 |
| TOTAL | $5,483.8 | $6,881.3 | $6,887.5 | $7,046.4 | $158.9 |
| Monitoring Systems, Characterization, And Quality Assurance - Air | | | | | |
| Salaries & Expenses | $6,534.2 | $5,657.8 | $5,664.7 | $11,294.2 | $5,629.5 |
| Research & Development | $5,471.7 | $6,657.8 | $6,657.8 | $36,099.2 | $29,441.4 |
| TOTAL | $12,005.9 | $12,315.6 | $12,322.5 | $47,393.4 | $35,070.9 |
| Health Effects - Air | | | | | |
| Salaries & Expenses | $7,003.8 | $5,861.2 | $5,861.2 | $6,048.7 | $187.5 |
| Research & Development | $16,524.9 | $13,228.8 | $13,168.8 | $13,981.3 | $812.5 |
| TOTAL | $23,528.7 | $19,090.0 | $19,030.0 | $20,030.0 | $1,000.0 |
| Environmental Engineering And Technology - Air | | | | | |
| Salaries & Expenses | $3,879.2 | $3,772.8 | $3,787.7 | $3,914.6 | $126.9 |
| Research & Development | $4,665.2 | $7,544.1 | $7,604.1 | $6,084.1 | -$1,520.0 |
| TOTAL | $8,544.4 | $11,316.9 | $11,391.8 | $9,998.7 | -$1,393.1 |
| Environmental Processes And Effects - Air | | | | | |
| Salaries & Expenses | $863.3 | $865.1 | $865.1 | $888.0 | $22.9 |
| Research & Development | $1,206.1 | $1,506.2 | $1,506.2 | $1,506.2 | |
| TOTAL | $2,069.4 | $2,371.3 | $2,371.3 | $2,394.2 | $22.9 |
| Stratospheric Modification Program - Air | | | | | |
| Salaries & Expenses | $2,085.3 | $3,161.3 | $3,178.3 | $2,895.6 | -$282.7 |
| Research & Development | $12,736.1 | $16,822.2 | $16,822.2 | $22,626.2 | $5,804.0 |
| TOTAL | $14,821.4 | $19,983.5 | $20,000.5 | $25,521.8 | $5,521.3 |
| TOTAL: | | | | | |
| Salaries & Expenses | $27,002.9 | $26,477.3 | $26,522.3 | $28,587.9 | $2,065.6 |
| Research & Development | $50,908.7 | $60,082.9 | $60,082.9 | $83,796.6 | $23,713.7 |
| Air Research TOTAL | $77,911.6 | $86,560.2 | $86,605.2 | $112,384.5 | $25,779.3 |

AIR
Air Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | |
| PERMANENT WORKYEARS | | | | | |
| Characterization, Transport And Fate - Air | 53.5 | 57.0 | 57.0 | | -57.0 |
| Scientific Assessment - Air | 46.4 | 53.4 | 53.4 | 51.3 | -2.1 |
| Monitoring Systems, Characterization, And Quality Assurance - Air | 99.3 | 104.5 | 104.5 | 191.5 | 87.0 |
| Health Effects - Air | 100.7 | 113.0 | 113.0 | 113.0 | 0.0 |
| Environmental Engineering And Technology - Air | 58.8 | 58.4 | 58.4 | 58.4 | 0.0 |
| Environmental Processes And Effects - Air | 14.1 | 13.8 | 13.8 | 13.8 | 0.0 |
| Stratospheric Modification Program - Air | 25.1 | 42.9 | 42.9 | 38.9 | -4.0 |
| TOTAL PERMANENT WORKYEARS | 397.9 | 443.0 | 443.0 | 466.9 | 23.9 |
| TOTAL WORKYEARS | | | | | |
| Characterization, Transport And Fate - Air | 54.2 | 57.0 | 57.0 | | -57.0 |
| Scientific Assessment - Air | 48.6 | 53.4 | 53.4 | 51.3 | -2.1 |
| Monitoring Systems, Characterization, And Quality Assurance - Air | 99.3 | 104.5 | 104.5 | 191.5 | 87.0 |
| Health Effects - Air | 109.8 | 113.0 | 113.0 | 113.0 | 0.0 |
| Environmental Engineering And Technology - Air | 59.4 | 58.4 | 58.4 | 58.4 | 0.0 |

AIR
Air Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| Environmental Processes And Effects - Air | 15.1 | 13.8 | 13.8 | 13.8 | 0.0 |
| Stratospheric Modification Program - Air | 26.9 | 42.9 | 42.9 | 38.9 | -4.0 |
| TOTAL WORKYEARS | 413.3 | 443.0 | 443.0 | 466.9 | 23.9 |

## AIR

### Air Quality Research

#### Principal Outputs

1992:

- Complete Air Quality Criteria documents for carbon monoxide and nitrogen oxides (Scientific Assessment).
- Complete final draft of diesel risk assessment document (Scientific Assessment).
- Complete risk reference concentration (RfC) evaluations for non-cancer health effects of an additional 40 of the 189 air toxics listed in the 1990 Clean Air Act Amendments (Scientific Assessment).
- Develop an updated/improved non-cancer health risk assessment methodology for chronic exposures to air toxics (Scientific Assessment).
- Continue to provide technical assistance on air toxics problems to State and local agencies via joint (with OAR) operation of the Air Risk Information Support Center (Scientific Assessment).
- Assessment of indoor bioaerosols (Scientific Assessment).
- Hold a workshop to review results of acid aerosol intercomparisons and assess adequacy of existing techniques (Monitoring).
- Report on the impact of concentrations of VOCs and $NO_x$ emissions on the development of effective regional ozone control strategies (Monitoring).
- Large building investigation protocol (Monitoring).
- Report on short term concentrations and variability of HAPs in urban air (Monitoring).
- Status report on NHANES-III cooperative research and preliminary screening of the spirometry and neurobehavioral data (Health).
- Completion of the evaluation key health effects from exposure to methanol in test animals (Health).
- Preliminary evaluation and characterization of chemically sensitive sub-populations (Health).

- Evaluation of biomarkers and mechanisms of lung injury associated with extended exposure to ambient ozone levels (Health).

- Complete the preliminary evaluation of animal models for U-VB-induced immunosuppression and increased susceptibility to infection (Health).

- Development of a physiologically-based pharmacokinetic model for predicting dosimetry of selected VOCs in humans (Health).

- Human sensitivity to gas phase organic chemicals indoors (Health).

- Ventilation design and management strategy for improving indoor air quality (Engineering).

- Interim research results documenting progress to date in improving area source emissions estimation methodologies (Engineering).

- Assessment of emissions control effectiveness of existing in place HAP control technologies (Engineering).

- Interim research results documenting improved VOC speciation data (Engineering).

- Completion of pollution prevention demonstrations of alternative coatings in the auto industry and the furniture industry (Engineering).

- Develop new methods for testing the effectiveness of air cleaners (Engineering).

- Develop innovative ventilation techniques and concepts for improving indoor air quality (Engineering).

- Prepare catalogue on emissions from indoor materials, including emission factors (Engineering).

- Complete engineering evaluation and input to Clean Air Act requirements for recycling of refrigerants from all major sources (Engineering).

- Provide sufficient information to industry to allow them to make decisions on low ozone depleting and high energy efficiency home refrigeration systems using non-azeotropic refrigerant mixtures (Engineering).

- Report on national estimates of methane emissions from natural gas systems (Engineering).

- Report on evaluation of mitigation techniques for anthropogenic sources of methane (Engineering).

- Report on initial phase of fuel cell demonstration for electricity production using landfill methane (Engineering).

- Report on the response of plants to formaldehyde and methanol contaminated fog (Environmental Processes).

- Interim risk assessment on the current magnitude of ozone damage to forest species (Environmental Processes).

- Report on effects of UV-B radiation on marine biogeochemical cycles (Stratospheric Modification).

- Report on impact of heterogeneous chemical processes on fate of CFC substitutes (Stratospheric Modification).

- Report on refrigerant recycling program (Stratospheric Modification).

- Report on alternative home refrigerator/freezer systems (Stratospheric Modification).

- Report on the nature, extent, and potential clinical relevance of UV-B-induced immunosuppression in normal human subjects (Stratospheric Modification).

- Costs and feasibility of alternative terrestrial systems management options (Stratospheric Modification).

- Technological evaluation of biomass utilization options (Stratospheric Modification).

- Ecoregion assessments for specific regions (Stratospheric Modification).

- First generation estimates of the total and net estimate of carbon dioxide and methane fluxes from high-latitude, temperate, and topical regions of the globe (Stratospheric Modification).

- Assessments of climate change impacts on physical biological properties of freshwaters (Stratospheric Modification).

- National assessment of the potential by regions for the direct use of biomass for fuel to supply energy needs (Stratospheric Modification).

- Global assessment of the current and future emissions of carbon dioxide, carbon monoxide, and methane from cookstoves, and the potential for mitigation (Stratospheric Modification).

- National assessment of the current and future emissions of methane from the natural gas industry (Stratospheric Modification).

- National assessment on the current and future emissions of methane from landfills and other waste management facilities and the potential for mitigation/utilization (Stratospheric Modification).

1991:

- External Review Draft (ERD) of the nitrogen oxides Air Quality Criteria Document (AQCD) for CASAC review (Scientific Assessment).

- Model indoor air risk assessment (Scientific Assessment).

- External Review Drafts (ERDs) of the carbon monoxide air quality criteria documents (AQCDs) for CASAC review (Scientific Assessment).

- Complete risk reference concentration (RfC) evaluations for non-cancer health effects of an additional 40 of the 189 air toxics listed in the 1990 Clean Air Act Amendments (Scientific Assessment).

- Continue to provide technical assistance on air toxics problems to State and local agencies via joint (with OAR) operation of the Air Risk Information Support Center (Scientific Assessment).

- Complete External Review Draft (ERD) of the diesel risk assessment document (Scientific Assessment).

- Summary report on the control strategy application of the Regional Oxidant Model for the Regional Oxidant Modeling Northeast Transport (ROMNET) program (Monitoring).

- Article on source apportionment of mutagenic activity in fine particle organics identified in Boise, Idaho field study (Monitoring).

- Preliminary results of research on the effects of UV-B radiation on human immunosuppression (Health).

- Report on response of the human respiratory tract to acute exposure to acid aerosols (Health).

- Report on the effects from inhalation of chemical mixtures found in indoor environments (Health).

- Evaluation of the relationship between mutagenic activity and carcinogenicity of selective mixtures (Health).

- Status report on NHANES-III cooperative research (Health).
- Provide input to SIP emissions inventory preparation guidance document based on short-term research results (Engineering).
- Report on the development of a secondary combustion woodstove for reducing particulate emissions to or below the 1990 NSPS (Engineering).
- Report on biocontaminant control by humidity control systems, air cleaners, and biocides (Engineering).
- Report on indoor air pollutant "sinks" (Engineering).
- Report on status of alternatives to halons as fire extinguishants (Engineering).
- Status report on alternatives for insulation which do not use CFC's (Engineering).
- Provide engineering information to extend the refrigerant recycling standards from mobile air conditioning and home refrigerator/freezers (Engineering).
- Report on the development of improved emission factors for methane for selected anthropogenic sources (Engineering).
- Report on selected UV-B effects on wetland rice ecosystems (Stratospheric Modification).
- Report on the sensitivity of forest regions to global change (Stratospheric Modification).
- Report on processes that control emissions of radiatively important trace gases from biosphere (Stratospheric Modification).
- Report on practical and beneficial techniques for mitigation of trace gases emissions (Stratospheric Modification).

1990:

- Report on aerosol sources for the Eastern U.S. (Characterization).
- Journal article characterizing tailpipe, evaporative and refueling emissions from gasoline fueled automobiles (Characterization).
- Evaluation of the Regional Oxidant Model (ROM) using analytical test data and new air quality data (Characterization).

- Peer review of draft diesel risk assessment document (Scientific Assessment).

- Provide technical assistance on air toxics problems to State and local agencies via joint (with OAR) operation of Air Risk Information Support Center (Scientific Assessment).

- Complete final documents on inorganic phosphorus, hydrogen cyanide, dimethylamine, and non-carcinogenic effects of chromium (update to Health Assessment Document) (Scientific Assessment).

- Complete risk reference concentration (RfC) evaluations for non-cancer health effects of approximately 25 of the 189 air toxics listed in the 1990 Clean Air Act Amendments (Scientific Assessment).

- Prepared External Review Drafts (ERD) for the nitrogen oxides and carbon monoxide air quality criteria documents (AQCDs) (Scientific Assessment).

- Model indoor air risk assessment (Scientific Assessment).

- Report on Analysis of Eastern US Visibility Data (Monitoring).

- Assessment of the contribution of wood burning and automobile emissions to the mutagenicity and carcinogenicity of airborne pollutants (Health).

- Report on the effects from inhalation of chemical mixtures found in indoor environments (Health).

- Characterization of the effects of extended ozone exposure in humans (Health).

- Report assessing the potential carcinogenicity of combustion emissions from unvented indoor kerosene heaters (Health).

- Assessment of the contribution of mobile source emissions to the genotoxicity of ambient urban aerosol mixtures (Health).

- Status report on NHANES-III cooperative research and evaluation of field and laboratory test protocol for spirometry (Health).

- Report on status of alternative refrigerants for home refrigerators (Engineering).

- Report on retrofit technology for existing woodstoves (Engineering).

- Report on Boise, Idaho field study of woodstove emissions (Engineering).

- Research report on biocontaminant control by air cleaners (Engineering).

- Research report summarizing available data on the effectiveness of air cleaners (Engineering).

- Research report on low emission materials and products (Engineering).

- Research report on kerosene heater emissions (Engineering).

- Report on the application of conventional particulate control technology in major areas of concern (Engineering).

- Report on area volatile organic compound (VOC) sources and control options to support the Agency's post-1987 ozone non-attainment strategy (Engineering).

- Report targeting opportunities for mitigation research (Engineering).

- Report on estimation of the relative importance of major forest types as sources and sinks for radiatively important trace gases (Stratospheric Modification).

- Report on role of photochemistry as a tropospheric source/sink for trace gases (Stratospheric Modification).

- Report on soil microbial processes relating radiatively important trace gas fluxes and water balance (Stratospheric Modification).

- Report on the effects of UV-B radiation on rice yield (Stratospheric Modification).

## Air Quality Research

Budget Request

The Agency requests a total of $112,384,500 supported by 466.9 total workyears for 1992 an increase of $25,779,300 and 23.9 total workyears from 1991. Of the request, $28,587,900 will be for the Salaries and Expenses appropriation and $83,796,600 will be for the Research and Development appropriation, increases of $2,065,600 and $23,713,700, respectively.

Program Objectives

This research program provides the research and technical support necessary to enable the Agency to carry out its regulatory and information transfer responsibilities under the Clean Air Act Amendments (CAAA). The goal of the air research program is to provide the Agency with the scientific data and analyses, technical support, and quality assurance needed to implement the provisions of the Clean Air Act Amendments, and other air pollution policies. This research includes health and ecological effects, monitoring, atmospheric modeling, control technology development, and scientific assessments.

The air research program provides the scientific data needed to issue and revise national standards for emissions of criteria air pollutants; supports issuance and revision of New Source Performance Standards (NSPS) and State Implementation Plans (SIPs) through the development of models and monitoring techniques for air pollutants and engineering studies of control technologies; identifies emissions of air pollutants from a variety of sources that are hazardous to human health but are not already regulated as criteria air pollutants; evaluates emissions, exposure patterns, and health effects of mobile source pollutants; and supports the Agency's efforts to inform the public about hazards associated with indoor air pollutants, and to develop methods to control air emissions from major sources. ORD provides the necessary data on the effects of stratospheric ozone depletion and resulting increases in harmful (UV-B) radiation on humans, plants, and ecosystems; addresses the research needed to determine the impact and consequences of global climate change, and develop and test predictive source and sink models for important trace gases; and provides national baseline data on exposure to pollutants, body burdens, and health effects.

### SCIENTIFIC ASSESSMENT

1992 Program Request

The Agency requests a total of $7,046,400 supported by 51.3 total workyears for this program, of which $3,546,800 will be for the Salaries and Expenses appropriation and $3,499,600 will be for the Research and Development appropriation. This represents a minor decrease of $59,200 in the Salaries and Expenses appropriation and 2.1 total workyears and an increase of $218,100 in the Research and Development appropriation. The decrease in the Salaries and Expenses Appropriation and workyears represents a reprogramming to other priority

areas. The increase in Research and Development appropriation reflects an increase in indoor air research.

ORD will complete the revised Air Quality Criteria Documents (AQCDs) for carbon monoxide (CO) and nitrogen oxides ($NO_x$). We will monitor new developments on acid aerosols and initiate the preparation of an interim assessment report to support decisionmaking on listings of acid aerosols for NAAQS regulation. ORD will provide follow-up support toward development of the NAAQS for lead and ozone, and will prepare an assessment of fine particle-visibility effects to support the Office of Air and Radiation (OAR).

ORD will develop inhalation References for Doses (RfDs), cancer unit risks, improved risk assessment methods for air toxics to support negligible risk and residual risk determinations including documentation to support health assessments, and review of listing/delisting petitions. Air Risk Information Support Center (RISC) activities will include hotline assistance and technical guidance related to health assessment of hazardous air pollutants.

In support of the Agency's Indoor Air Quality Implementation Plan, ORD will develop a risk characterization methodology to assess non-cancer health effects associated with different indoor air pollution exposure scenarios, especially biocontaminants. This research will commence with a preliminary review of bioaerosol literature, as well as draft technical manuscripts on airborne mycotoxins and the use of biocides as a mitigation technique. The final document will contain evaluations and scientific assessments on the health and welfare effects associated with exposure of different populations to various types, concentrations, and mixtures of biological pollutants in a variety of indoor environments. Finally, ORD will evaluate scientific data on environmental monitoring to provide a better understanding of these pollutants in the indoor environment.

1991 Program

In 1991, the Agency is allocating a total of $6,887,500 supported by 53.4 total workyears for this program, of which $3,606,000 is from the Salaries and Expenses appropriation and $3,281,500 is from the Research and Development appropriation. ORD is revising the criteria documents for carbon monoxide (CO) and nitrogen oxides ($NO_x$). Scientists are developing support materials for revision of the existing 1-hour ozone and NAAQS regulations, and ORD will determine the need for a NAAQS for acid aerosols. ORD is updating data bases on PM-related research, including research initiated in FY 1989-90 on fine particle visibility assessment database materials.

ORD conducts health assessments research in support of Title III of the Clean Air Act Amendments including: completion of Tier I and Health Assessment Documents (HADs) for HAPs currently in draft; development of inhalation RfDs for listed air toxics; development of cancer unit risks for listed air toxics; development of improved methods to assess health risks; and the development of documentation to support the health risk elements of regulatory activities. Research scientists are reviewing the health effects portions of petitions to add or delete compounds from the list of air toxics. ORD will support the Air Risk Information Support Center (RISC) whose activities include Hotline assistance and technical guidance related to health assessment of HAPs.

In support of the Agency's Indoor Air Quality Implementation Plan, ORD will conduct risk assessments for multiple and non-cancer indoor air pollutants and a health assessment of biocontaminants found indoors. The Agency will distribute these assessments, which are based on the results of laboratory studies and available literature, to other Federal agencies, State and local governments, and the general public.

1990 Accomplishments

In 1990, the Agency obligated a total of $5,483,800 supported by 46.4 total workyears for this research program, of which $3,262,900 was from the Salaries and Expenses appropriation and $2,220,900 was from the Research and Development appropriation. Research scientists completed an ERD of the AQCD for carbon monoxide, held peer-review workshops for the review of AQCD for nitrogen oxide, and prepared an issue paper on the health effects of acid aerosols. Other scientists completed a supplement to AQCD for lead and assessments on ammonia, hydrogen fluoride, inorganic phosphorous, hydrogen cyanide, dimethylamine, and hospital waste incineration. ORD updated the HAD on non-cancer effects of chromium. ORD initiated preparation of approximately 30 RfCs and completed a risk reference concentration (RfC) evaluation for 9 cancer health effects of approximately 25 of the 189 air toxics listed in the CAAA. ORD prepared the first draft of the diesel risk assessment document. In collaboration with OAR, ORD developed and successfully operated the Air Risk Information Support Center (Air RISC). Finally, ORD greatly expanded the indoor air bibliographic data base and its accessibility to the public.

MONITORING SYSTEMS, CHARACTERIZATION, AND QUALITY ASSURANCE

1992 Program Request

The Agency requests a total of $47,393,400 supported by 191.5 total workyears for this research program, of which $11,294,200 will be for the Salaries and Expenses appropriation and $36,099,200 will be for the Research and Development appropriation. This represents an increase of $5,629,500 in the Salaries and Expenses appropriation, an increase of $29,441,400 in the Research and Development appropriation, and an increase of 87.0 total workyears. The increase in S&E is to fund the Federal workforce needed to implement the President's program in 1992. The increases represent the merging of the Characterization, Transport and Fate Program Element for FY 1992, indoor air research, and the implementation of the Clean Air Act Amendments (CAAA). The implementation of the Clean Air Act Amendments includes new research for non-attainment, mobile sources, hazardous air pollutants and acid deposition.

ORD will measure and monitor ozone and acid aerosols. In light of the evidence supporting the existence of chronic ozone health effects, the Agency is considering moving from the current 1-hour standard to a new standard with a longer averaging time. ORD scientists will characterize acid aerosols, broadly support ongoing epidemiological studies, and investigate acid aerosol formation and neutralization. ORD will expand existing models and emissions inventories to cover acid aerosols and related pollutants (i.e., ammonia), and use these models to estimate Regional exposure. Scientists will evaluate, improve, and standardize ambient monitoring systems for criteria pollutants including the field evaluations of automatic monitors. ORD will improve existing personal

exposure monitoring instruments which can quickly determine peak exposures. ORD will continue its support on exposure assessment to augment selected epidemiological studies conducted by other Federal agencies. Scientists will test new types of $PM_{10}$ candidate samplers and continuous monitors, and will continue visibility monitoring at two sites. ORD will analyze the visibility monitoring results to determine the source of each aerosol component, and its season variation. Scientists will modify photochemical models to include important pollutant parameters that contribute to visibility reduction. ORD will determine the organic composition and size distribution of rural and urban aerosols; document geographical and seasonal variations and indoor/outdoor ratios; and conduct microenvironment and personal monitoring studies. Following the Clean Air Science Advisory Committee (CASAC) recommendations, ORD scientists will study up to 3 or more urban areas for spacial distribution of acids, source-receptor relationships, seasonal patterns, local and synoptic meteorological influence, and the relationship of personal exposure to indoor and outdoor concentrations. Data from these urban areas will help form the basis for a more extensive exposure assessment. ORD will provide quality assurance, analytical assistance, and data management support to program offices, other EPA laboratories, and international agencies.

To evaluate the need for New Source Performance Standards (NSPS) and to review the effectiveness of State Implementation Plans (SIPs), ORD will conduct studies on real-dimensional data in real-time intervals obtained using Light Induced Detection and Ranging (LIDAR) techniques. ORD will use these techniques to help regions in non-attainment for pollutants such as ozone ($O_3$) and carbon monoxide (CO). The National Space and Aeronautics Administration (NASA) and several Western States provide some of the funding for this research. ORD scientists will develop source measurement methodologies and quality assurance procedures, materials, and standards methods for use in Agency monitoring programs and regulatory activities.

To comply with the CAAA, the States and EPA must have air quality models to develop and review SIPs for ozone. ORD will provide to the Office of Air and Radiation (OAR) an evaluated chemical mechanism that predicts ozone formations for use by State and local governments in preparing their ozone SIPs. ORD scientists will conduct new research on the role that biogenic VOCs have in affecting ozone non-attainment and on proposed control strategies. ORD will use the Regional oxidant Model (ROM) to determine the impact of various VOCs and $NO_x$ emissions on ozone control strategies for the Northeastern States, and will expand ROM to be able to predict long-term and cumulative type of Regional ozone air quality estimates.

ORD will use data from the 1988 Acid Deposition field study to test the Regional Particulate Model (RPM) to help in evaluating control strategies for $PM_{10}$ and visibility. ORD researchers will incorporate results of fluid modeling simulations of building wake/cavity dispersion and stack tip-down wash into models for regulatory applications. ORD will perform fluid modeling experiments to modify regulatory models to account for valley stagnation, pollutant impingement on lee sides of terrain obstacles, and conduct studies on dispersion of dense gases over inhomogeneous surfaces. Scientists will conduct studies of urban boundary conditions using 1989 regional mass measurement field study data to develop urban scale particulate models. ORD will complete Version 7 of the Users Network for Applied Modeling of Air Pollution (UNAMAP).

The Agency uses source emission monitors to set the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) and to determine compliance with these standards. ORD will develop, evaluate, and standardize monitoring systems for measuring potential HAPs in ambient air, inhaled air, and from other sources. ORD researchers will investigate techniques such as selective detectors and portable monitors to improve the surveillance and control of industrial sources. ORD will operate Toxic Air Monitoring Stations (TAMS) to provide valuable experience in applying the newly developed methods for a variety of HAPs. Scientists will develop advanced monitoring methods to deal with the special conditions imposed by complex mixtures of air pollutants. ORD will develop quality assurance procedures and materials for Agency monitoring programs and will assist OAR and the Regions with the evaluation of the quality of monitoring data collected by Regions, States, and other outside sources. ORD scientists in the Integrated Air Cancer Project (IACP), will develop methods for both indoor and outdoor detection of important HAPs and will examine the formation, stability, and transformation of volatile and aerosol bound organics, as well as quantify the atmospheric transformation processes that produce these compounds. ORD will determine the atmospheric reaction rates and transformation products of HAPs under Agency review. Scientists will conduct bioassay-directed smog chamber studies to measure the reaction of HAPs air toxics and the formation of other hazardous products from atmospheric transformation of HAPs and high-volume manufactured organics.

ORD will evaluate the impact of mobile source control technologies on evaporative and exhaust emissions with emphasis on alternative fuels. Scientists will characterize both regulated and selected unregulated emissions and will determine the significance of "running-loss" evaporative emissions from tailpipes and evaporative hydrocarbons at elevated ambient temperatures. ORD scientists will develop a more realistic measurement of actual human exposure to mobile source pollutants. ORD will extend the CO human exposure methodology to benzene and other VOCs with an emphasis toward quantifying exposures resulting from alternative fuels (i.e., methanol). ORD will develop, refine, and field-test human activity pattern-exposure models. ORD will evaluate statistical models which predict human exposures while traveling in vehicles to pollutants.

Based on the human exposure research needs identified by the Total Human Exposure Research Council and to support the Indoor Air Quality Implementation Plan, ORD will develop building diagnostic and measurement methods (i.e., study protocols, questionnaires, and instruments) to be used for indoor air studies in complaint and non-complaint buildings and residences. Scientists will continue developing the methodology needed for assessing indoor air quality in large buildings. ORD will conduct large building studies including administering occupant surveys and performing pollutant and ventilation measurements. Researchers will develop diagnostic protocols and monitoring techniques, especially for biological contaminants. ORD will develop low-cost screening/monitoring and analytical methods for biocontaminants.

The Clean Air Act Amendments require the Agency to establish a program of research, testing, and development of methods for sampling, measuring, analyzing, and modeling air pollutants. To implement these requirements, ORD is enhancing research on the emissions inventory, ozone non-attainment, air toxics, mobile sources, and acid deposition. ORD will include programs dealing with individual exposures to multiple air pollutants, the development of new monitoring methods, the initiation of a research program on short- and long-term effects of air

pollutants on human health, and guidelines needed to perform health assessments on each of the hazardous air pollutants listed, and a continuation of the clean alternative fuels research program. ORD scientists will conduct research on ozone and acid aerosol methods and effects, characterization and effects, human health effects, characterization and transformation of alternative fuels, development of new air toxics risk assessments and generic air toxics source methods, the development of control technologies for VOCs, and the development of methods and instruments for continuous emission monitoring and modelling to support acid deposition implementation.

To support non-attainment mandates, ORD will evaluate and validate the ozone/precursor transport models, develop in-field measurement studies, conduct health effects research, and technical assessments/research to support Control Techniques Guidelines (CTGs) for VOCs. Increases will fund the cooperative visibility research with the National Park Service. This research will include the characterization of urban acid aerosol levels, as well as the characterization of the atmospheric chemistry/transport of acid aerosols. To support mobile sources sections, ORD will expand existing research to encompass additional technologies and fuels, as well as the characterization of their emissions. ORD scientists will focus increased attention to atmospheric transformation and on a study of the impacts from fuel switching on stationary source emissions. For the air toxics requirements, researchers will continue and expand work on: the development of source methods needed for each chemical/source category, human exposure modeling and validation, and new cancer risk assessments. This includes research needed to review petitions, improve risk assessments/methodology, conduct risk research, and to produce the actual assessment documents. ORD will fund portions of the required Great Lakes Study including research on long range transport, transformation, and deposition of toxics chemicals. To implement acid deposition requirements, ORD will initiate research on the industrial emissions inventory and on the evaluation of state-of-the-art low $NO_x$ burner technology needed to establish an optimum NSPS. ORD will complete the evaluation, maintenance, and application of RADM to evaluate the effectiveness of Title IV controls, modeling of Western lake effects, determining the potential effects of trading $SO_2$ for $NO_x$, and for reporting on the feasibility of an acid deposition standard to protect U.S. and Canadian aquatic and terrestrial resources. ORD will support the continuation of National Acid Precipitation Assessment Program (NAPAP), and will conduct a full scale field validation of CEMS technology over the range of instrumentation likely to be used by utilities to meet the 1993 and 1995 deadlines.

1991 Program

In 1991, the Agency is allocating a total of $12,322,500 supported by 104.5 total workyears for this research program, of which $5,664,700 is from the Salaries and Expenses appropriation and $6,657,800 is from the Research and Development appropriation. ORD will evaluate and improve ambient and source monitoring systems and measurement methods used in the measurement of NAAQS pollutants to include in-depth evaluation of $PM_{10}$ samplers, the development of methods for measuring acid aerosols, and remote monitoring techniques such as the airborne UV-DIAL system for measuring $SO_2$ and ozone. Scientists in the Toxic Air Monitoring Stations (TAMS) program will conduct field evaluations for potential widespread application of monitoring methodologies of non-criteria pollutants. ORD researchers in the Integrated Air Cancer Project (IACP) will analyze the results from the air monitoring field study on residential oil heating. ORD is

developing quality assurance procedures and materials for use in Agency monitoring programs and regulatory activities, and will conduct evaluations of the quality of monitoring data collected by Regions, States, and other outside sources. Scientists conducting indoor monitoring research will develop air samplers for use in quantifying indoor air exposures in important microenvironments, and will develop methodologies which identify sources contributing to "Sick Building" syndrome. To support the new Clean Air Act Amendments, ORD will conduct new research on emissions inventory, ozone non-attainment, air toxics, and mobile sources.

1990 Accomplishments

In 1990, the Agency obligated a total of $12,005,900 supported by 99.3 total workyears for this research program, of which $6,534,200 was from the Salaries and Expenses appropriation and $5,471,700 was from the Research and Development appropriation. ORD scientists participated in having the first two automated methods for measuring and monitoring $PM_{10}$ designated as Equivalent Methods under 40 CFR, Part 53. These monitors will provide useful $PM_{10}$ measurements over shorter time intervals, as well as continuous unattended operation over several weeks. Scientists completed an acid aerosol measurement methods intercomparsion study that measured ambient sulfuric acid, ammonium bisulfate, and ammonium nitrate. ORD restructured the Toxic Air Monitoring Study (TAMS) to serve as a research program to evaluate new methodology for determining polar VOCs, and for evaluating techniques to measure the distribution of VOCs between the solid and gaseous phases in ambient air. ORD scientists published a compendium of technically reviewed sampling and analysis procedures in a standardized format for determination of pollutants in indoor air.

HEALTH EFFECTS

1992 Program Request

The Agency requests a total of $20,030,000 supported by 113.0 total workyears for this research program, of which $6,048,700 will be for the Salaries and Expenses appropriation and $13,981,300 will be for the Research and Development appropriation. This represents a increase of $187,500 in the Salaries and Expenses appropriation and an increase of $812,500 in the Research and Development appropriation. The increase in S&E is to fund the Federal workforce needed to implement the President's program in 1992. The increase in R&D is to support clinical health research on NAAQS and hazardous air pollutants.

ORD will focus its NAAQS program on ozone and acid aerosols. ORD's health scientists will study acute, subchronic, and chronic exposure to criteria pollutants in response to the statutory mandate for periodic review of NAAQS and the research needs identified by the Clean Air Science Advisory Committee (CASAC) of the Agency's Science Advisory Board (SAB). Researchers will study species sensitivity issues and inflammatory and pulmonary function responses in man. ORD will shift exposure studies from acute to chronic effects, and will emphasize the respiratory and immunological effects of ozone and sulfuric acid. Scientists will develop theoretical models of respiratory tract deposition, and will elucidate the risks to potentially susceptible subpopulations. This research will include chronic animal toxicology studies to determine the relationship between long-term exposure to urban patterns of ozone and the onset or

exacerbation of chronic lung disease. Scientists will focus their epidemiology studies on chronic cardiopulmonary effects of ambient and indoor combinations of ambient air pollutants.

To support development of regulations for toxic air pollutants, ORD scientists will improve the quantitative assessment of risks for listing/delisting, urban air toxics, and residual risk. ORD will develop predictive models to more accurately characterize the relationship between exposure and response. Also as part of the Integrated Air Cancer Project (IACP), scientists will assess the mutagenic and carcinogenic effects of urban air mixtures, and will evaluate the dose-response relationships for individual compounds and complex mixtures. Researchers will conduct dosimetry studies on pulmonary deposition and dose to genetic materials, and develop bioassays for use in biomonitoring networks.

ORD will provide data for Agency policymakers on the risks to public health and welfare from exposure to automotive emissions and the atmospheric transformation products of these emissions. Scientists will conduct research to determine the contribution of motor vehicle emissions to the mutagenicity of ambient air and to assess DNA adducts as biomarkers of risk from mobile source emissions. ORD will study the effect of alternative fuels on the mutagenic activity of automotive emissions. Scientists will study both cancer and non-cancer health effects of motor vehicle fuels, additives, and alternative fuels (i.e., methanol).

Scientists will study the health effects of combustion products (e.g., environmental tobacco smoke, ETS) and volatile organic compound (VOCs) mixtures associated with sick building syndrome. ORD will conduct chamber studies on the health effects to animals and humans associated with typical exposures to indoor pollutants, both individually and in combination emitted from commonly found sources. ORD will assess the risks of non-cancer end points and use a combination of indoor pollutants more typical of U.S. indoor environments. Health scientists will focus their biomarker research on new ways that can be used to estimate exposures to ETS. New research includes non-cancer health effects, the genotoxicity of emissions from various indoor combustion appliances, and associated mitigation strategies.

The goal of the Health Effects Institute (HEI) is to gather information and conduct research on the health effects of motor vehicle emissions. Researchers at HEI will characterize human dose-response and quantify human risk from mobile source pollutants (i.e., alternative fuels).

1991 Program

In 1991, the Agency is allocating a total of $19,030,000 supported by 113.0 total workyears for this research program, of which $5,861,200 is from the Salaries and Expenses appropriation and $13,168,800 is from the Research and Development appropriation. ORD's health scientists will study acute, sub-chronic, and chronic exposures to ozone, sulfur dioxide, and nitrogen dioxide, other NAAQS pollutants to determine effects on various systems (including respiratory, metabolic, and immune systems), and human health effects from exposure to acid aerosols. Scientists studying animal toxicology and human studies on $NO_2$, $O_3$, $SO_2$, and sulfuric acid will emphasize research on the relationship between exposure, dose, and effect (including respiratory disease).

In the Interdivisional Air Toxics Program, researchers will look at the genotoxic effects associated with exposure to complex mixtures. Scientists will study the impact of alternative fuels and their emissions on human health. Researchers conducting indoor air research will emphasize the health effects of combustion products, sick building syndrome, VOC mixtures, and ETS. ORD will conduct chamber studies to evaluate indoor VOCs as they relate to "sick building syndrome" and will complete the evaluation of the usefulness of cotinine as a biomarker for ETS. ORD will continue to support HEI which is studying the various aspects of criteria pollutant toxicity and the health effects associated with mobile source pollutants (including diesel exhaust, aldehydes, and alternative fuels such as methanol).

1990 Accomplishments

In 1990, the Agency obligated a total of $23,528,700 supported by 100.7 total workyears for this research program, of which $7,003,800 was from the Salaries and Expenses appropriation and $16,524,900 was from the Research and Development appropriation. ORD health scientists issued reports/articles in the following research areas: scientific support for development and review of primary and secondary NAAQS, support for development of regulations for hazardous air pollutants, support for the mobile source regulatory program, and support for evaluation of effects associated with indoor air pollutants.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1992 Program Request

The Agency requests a total of $9,998,700 supported by 58.4 total workyears for this research program, of which $3,914,600 will be for the Salaries and Expenses appropriation and $6,084,100 will be for the Research and Development appropriation. This represents an increase of $126,900 in the Salaries and Expenses appropriation and an decrease of $1,520,000 in the Research and Development appropriation. The increase in S&E is to fund the Federal workforce needed to implement the President's program in 1992. The decrease in R&D reflects a reprogramming to higher priority air media needs.

ORD will support development, review, and enforcement of State Implementation Plans (SIPs) and promulgation of New Source Performance Standards (NSPS). This research includes: completion of the field evaluation of the advanced silicate (ADVACATE) process for $SO_x$ control; additional studies to assess the long-term performance of several different catalysts which could be used in Selective Catalyst Reduction (SCR) systems; $PM_{10}$ control from woodstoves; and ozone non-attainment control by developing techniques and approaches for reducing the emissions of volatile organic compounds (VOC's) from area sources. In non-attainment, engineering scientists will evaluate methods to reduce emissions from coating operations and consumer solvents. ORD will conduct emissions research which supports acid deposition, ozone non-attainment, and $PM_{10}$ implementation programs, and will emphasize improved area source emission estimation techniques and validation techniques especially for VOC area sources.

The Clean Air Act Amendments (CAAA) directs EPA to provide information on control techniques for hazardous air pollutants (HAPs). To implement this requirement, ORD supports the operation of the Air Toxics Control Technology Center (CTC). The CAAA also requires expansion of this activity to include support for small businesses. ORD engineers will develop guidelines for measuring the compliance and effectiveness of air toxic regulations, an engineering quality assurance program for permitting, and development of the corona destruction process. In the enhanced emission inventory program, ORD engineers will develop estimation methodologies and validation, and improve air toxic emission and speciation factors. ORD will continue the Pollution Prevention Project which began in 1991 in order to identify, develop, and demonstrate prevention techniques which reduce emissions of volatile organic compounds (VOC's) and HAPs emitted from area sources such as consumer products and industrial solvents.

In pursuance of the Indoor Air Quality Implementation Plan, ORD engineers will complete methods for testing the performance of air cleaners to be used by manufacturers to validate the efficiency of their units. A cooperative project with the American Institute of Architects will result in a catalogue of indoor materials describing their emission characteristics. ORD will expand the IAQ control research program to include the evaluation and development of innovative ventilation techniques. Engineers will conduct research to describe the emission characteristics of indoor sources and sinks, and will test commercially available units for their effectiveness in removing particles and vapors in indoor environments. ORD will conduct chamber and field studies which will develop and evaluate novel techniques for ventilation, which includes displacement flow arrangements and microenvironmental workstations, and field studies of gaseous pollutant removal systems.

1991 Program

In 1991, the Agency is allocating a total of $11,391,800 supported by 58.4 total workyears for this research program, of which $3,787,700 is from the Salaries and Expenses appropriation and $7,604,100 is from the Research and Development appropriation. In support of NAAQS compliance and the new acid rain title of the CAAA, ORD engineers will develop and evaluate the ADVOCATE process for $SO_2$ control and Selective Catalyst Reduction (SCR) for $NO_x$ control. The ADVACATE field evaluation at TVA's Shawnee pilot facility will yield crucial information for scale up to commercial applications. Engineers will use a bench/small pilot apparatus to study the parameters which affect catalyst reactivity and determine long-term catalyst performance in their SCR research. This research will resolve questions concerning the applicability of SCR to U.S. fuels and processes. To support the $PM_{10}$ compliance, engineering scientists will focus on the control of particulate and condensible organics from woodstoves. ORD will evaluate the ozone and air toxics source control technologies, further develop the corona destruction process for controlling low concentration streams of VOC's, and technically support EPA program offices, Regions, States, and localities through the CTC. ORD will address methodology development for area sources of VOC's. Engineers will focus their indoor air research on the evaluation of air cleaners for control of biological contaminants, chamber studies of organic emissions from indoor sources, evaluation of indoor sinks, and modeling and source characterization of indoor pollutants.

Congressional Directives. A total of $2,650,000 is for the Congressionally directed project of Coke Oven Emissions.

1990 Accomplishments

In 1990, the Agency obligated a total of $8,544,400 supported by 58.8 total workyears for this research program, of which $3,879,200 was from the Salaries and Expenses appropriation and $4,665,200 was from the Research and Development appropriation. In the indoor air program, ORD engineers developed personal computer models for evaluating indoor air quality control options, produced reports on low emitting materials and products, and reports on emissions from unvented kerosene heaters. In the $SO_2$ and $NO_x$ control area, ORD improved the ADVACATE sorbent preparation process by creating a sorbent which is three times as reactive and in the SCR area. ORD determined that there is no $N_2O$ generation when applied to U.S. processes. In the PM control program, ORD engineers modified a commercially available woodstove and significantly improved its performance by almost 70 percent. ORD provided extensive technical support to States, Regions, and other environmental officials through the CTC and demonstrated the technical viability of the innovative corona destruction process at the bench scale.

ENVIRONMENTAL PROCESSES AND EFFECTS

1992 Program Request

The Agency requests a total of $2,394,200 supported by 13.8 total workyears for this research program, of which $888,000 will be for the Salaries and Expenses appropriation and $1,506,200 will be for the Research and Development appropriation. This represents a minor increase of $22,900 in the Salaries and Expenses appropriation to fund the Federal workforce needed to implement the President's program in 1992.

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, ORD scientists in this area will assess the impact of ozone damage on economically and ecologically significant forest species to determine if the damage occurring supports a new ozone standard. ORD will assess the risk from ozone on major commercially valuable forest tree species in areas that are most at risk. Research will include ecophysiological studies of ozone impacts in order to estimate of changing air quality over different environmental conditions and time, and critical components of exposure for development of relevant NAAQS. ORD'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 (EPRI).

1991 Program

In 1991, the Agency is allocating a total of $2,371,300 supported by 13.8 total workyears for this research program, of which $865,100 is from the Salaries and Expenses appropriation and $1,506,200 is from the Research and Development appropriation. ORD will conduct research to determine the effects of ozone of forests especially in sensitive tree species with emphasis on species of economic

importance. ORD will expose selected forest species to ozone levels which are likely to occur in forest regions of the U.S..

1990 Accomplishments

In 1990, the Agency obligated a total of $2,069,400 supported by 14.1 total workyears for this research program, of which $863,300 was from the Salaries and Expenses appropriation and $1,206,100 was from the Research and Development appropriation. ORD will conduct research to determine the effects of ozone of forests especially in sensitive tree species with emphasis on species of economic importance.

CHARACTERIZATION, TRANSPORT, AND FATE

1992 Program Request

For FY 1992, the Characterization, Transport and Fate Program Element will be shifted/integrated to the Monitoring Systems and Quality Assurance Program Element which will now be called Monitoring Systems, Characterization, and Quality Assurance. Combining these two programs will improve and facilitate the overall research planning, management, and implementation of this research.

1991 Program

In 1991, the Agency is allocating a total of $14,601,600 supported by 57.0 total workyears for this research program, of which $3,559,300 is from the Salaries and Expenses appropriation and $11,042,300 is from the Research and Development appropriation. ORD will support the development and evaluation of secondary air quality standards for $PM_{10}$. In ozone research, ORD will produce chemical models to reduce errors in predicting ozone formation associated with precursor emissions of VOCs and $NO_x$. Scientists will evaluate the Regional Oxidant Model (ROM) against field data to determine the impacts of simulated VOC and $NO_x$ emission controls on ozone air quality. Other ozone research includes a program to monitor VOCs and $NO_x$ to help determine reasons for ozone non-attainment. ORD will develop an improved source apportionment model for regional scale aerosols. ORD scientists will conduct special studies to examine the potential role of biogenic VOCs and other factors ozone non-attainment areas. ORD will complete the first generation Regional Particulate Model (RPM) to be evaluated in the User's Network for Applied Modeling of Air Pollution (UNAMAP) program. ORD will conduct studies of HAP levels in urban atmospheres and characterize mobile source emissions from vehicles equipped with new emission control devices using conventional gasoline fuels or alternative fuels (i.e., methanol-blended fuels).

Congressional Directives. A total of $3,150,000 is for the Congressionally directed project of Southern Oxidants Study.

1990 Accomplishments

In 1990, the Agency obligated a total of $11,458,000 supported by 53.5 total workyears for this research program, of which $3,374,200 was from the Salaries and Expenses appropriation and $8,083,800 was from the Research and Development appropriation. In 1990, scientists completed a monitoring study which

characterized the ambient air of Atlanta with respect to ozone and its precursors. The research scientists measured VOCs, aldehydes, $NO_x$, ozone, and meteorological parameters by conventional means. ORD used a new long-path technique known as Differential Optical Absorption Spectroscopy (DOAS) to determine ozone, $NO_x$, and some VOCs. ORD completed a study entitled "A Chamber and Modeling Study to Assess the Photochemistry of Formaldehyde." Scientists continued studies to identify the HAPs that are produced in the atmosphere when organic compounds/$NO_x$ mixtures are irradiated by simulated sunlight.

## STRATOSPHERIC MODIFICATION

### 1992 Program Request

The Agency requests a total of $25,521,800 supported by 38.9 total workyears to support the U.S. Global Change Research Program, of which $2,895,600 will be for the Salaries and Expenses appropriation and $22,626,200 will be for the Research and Development appropriation. This represents a decrease of $282,700 in the Salaries and Expenses appropriation and 4.0 workyears and a increase of $5,804,000 for the Research and Development appropriation. This represents a substantial increase in the global change research program to provide policymakers with reliable projections on the potential for global warming and its environmental consequences. The workyear decrease is due to a reassessment of workyear priorities in other media areas. This research includes a multidisciplinary research program to determine the impacts of increased UV-B radiation on terrestrial, aquatic ecosystems, human health, and to investigate mitigative solutions. The Global Climate Research Program is designed to expand into critical new areas relative to understanding the role of the terrestrial biosphere in global climate change and its potential management for carbon mitigation. The impact of global climate change poses the largest and most significant long-term man-made environmental problem of the future. To provide policymakers with reliable projections on the potential for global warming and its environmental consequences, ORD will expand the current research substantially. The Stratospheric Ozone Research Program will conduct research under the Agency's stratospheric ozone depletion program in terrestrial and aquatic ecosystems, human health, emissions, and mitigative solutions. Through the Montreal Protocol, the international community has formally identified depletion of the stratospheric ozone layer as one of the most important problems facing the world today. To address the scientific uncertainties associated with ozone depletion, ORD will conduct a multidisciplinary research program in terrestrial and aquatic ecosystems, human health, emissions, and mitigative solutions.

In FY 1992, ORD's Global Change Research Program will measure and model current magnitudes of carbon gas fluxes between soils/sediments, vegetation, and the atmosphere in major climatic zones. Researchers will characterize effects of land-use changes and other human activities that alter the fluxes and their source pools. ORD will target the identification and characterization of: (1) climatically sensitive biospheric and atmospheric processes that produce and consume carbon gases (primarily carbon dioxide and methane), and evaluate their relative global importance as feedbacks; and (2) the effects of climate change on climatically sensitive biota. Engineering researchers will pursue selected development and demonstrations of promising techniques that reduce emissions of RITGs to accelerate the commercialization and application of those techniques.

enhanced UV-B, and global climate change on the rice ecosystems and productivity, particularly in Asia. Rice paddies are a major source of methane emissions. Researchers in the Stratospheric Ozone Program will evaluate chemical and technological alternatives to the ozone depleting substances. These alternatives will be used as replacements for CFCs (i.e., refrigerants, foam-blowing agency and solvents), halons (in fire extinguishers), and nitrous oxides (from farming and natural systems). Scientists will highlight research on the loss from automobile air conditioners, recycling of CFCs, and the need for rapid technology transfer and market penetration of CFC replacements.

1991 Program

In 1991, the Agency is allocating a total of $20,000,500 supported by 42.9 total workyears for this research program, of which $3,178,300 is from the Salaries and Expenses appropriation and $16,822,200 is from the Research and Development appropriation. In 1991, ORD's Global Change Research program will evaluate the degree to which forests and agroecosystems can be technically managed to conserve and sequester carbon, and reduce the accumulation of carbon dioxide in the atmosphere. Scientists will emphasize managed terrestrial ecosystems, given their significant role in the global carbon cycle. ORD will assess appropriate management technologies, cost and benefits, implementation procedures, and environmental risks and benefits. This research will provide the scientific basis for formulating and implementing policies to prevent, and adapt to global climate change. ORD's goal is to predict the processes and effects of global change, globally. ORD's emissions research will include the development of global and regional emissions factors, and develop emission inventories of radiatively important tract gases (RITGs). Scientists will focus on harvesting, preparation, and combustion of biomass fuel and the sequestration of biomass in useful products. ORD's Stratospheric Ozone Research program will examine the effects of stratospheric ozone depletion within the context of the Montreal Protocol, and Federal and international research efforts.

Congressional Directives. A total of $550,000 is for the Congressionally directed project of Solar Commercialization.

1990 Accomplishments

In 1990, the Agency obligated a total of $14,821,400 supported by 25.1 total workyears for this research program, of which $2,085,300 was from the Salaries and Expenses appropriation and $12,736,100 was from the Research and Development appropriation. Global change scientists issued a report on the role of photochemistry as a tropospheric source/sink for trace gases, and on the soil microbial processes relating radiatively important trace gas fluxes and water balance. Scientists issued a report on the effects of UV-B radiation on rice yield and on the estimation of the relative importance of major forest types as sources and sinks for radiatively important trace gases. Engineers issued a report on the status of alternative refrigerants for home refrigerators, and on the retrofit technology for existing woodstoves.

Abatement
and Control

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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## AIR
## Air Quality & Stationary Source Planning & Standards

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Emission Standards & Technology Assessment | | | | | |
| Salaries & Expenses | $6,153.6 | $8,013.1 | $8,013.1 | $10,159.3 | $2,146.2 |
| Abatement Control and Compliance | $7,537.2 | $14,128.7 | $14,128.7 | $22,028.7 | $7,900.0 |
| TOTAL | $13,690.8 | $22,141.8 | $22,141.8 | $32,188.0 | $10,046.2 |
| National Pollutant Policies, Strategies, and Rules | | | | | |
| Salaries & Expenses | $2,796.7 | | | | 0.0 |
| Abatement Control and Compliance | $8,613.5 | | | | 0.0 |
| TOTAL | $11,410.2 | | | | 0.0 |
| State Program Policy Guidelines & Air Standards Development | | | | | |
| Salaries & Expenses | $5,926.8 | $7,356.6 | $7,356.6 | $7,690.1 | $333.5 |
| Abatement Control and Compliance | $3,942.3 | $5,683.3 | $5,683.3 | $7,883.3 | $2,200.0 |
| TOTAL | $9,869.1 | $13,039.9 | $13,039.9 | $15,573.4 | $2,533.5 |
| TOTAL: | | | | | |
| Salaries & Expenses | $14,877.1 | $15,369.7 | $15,369.7 | $17,849.4 | $2,479.7 |
| Abatement Control and Compliance | $20,093.0 | $19,812.0 | $19,812.0 | $29,912.0 | $10,100.0 |
| Air Quality & Stationary Source Planning & Standards TOTAL | $34,970.1 | $35,181.7 | $35,181.7 | $47,761.4 | $12,579.7 |
| **PERMANENT WORKYEARS** | | | | | |
| Emission Standards & Technology Assessment | 95.6 | 123.1 | 123.1 | 151.0 | 27.9 |
| National Pollutant Policies, Strategies, and Rules | 40.2 | | | | 0.0 |
| State Program Policy Guidelines & Air Standards Development | 98.2 | 112.5 | 112.5 | 114.3 | 1.8 |
| TOTAL PERMANENT WORKYEARS | 234.0 | 235.6 | 235.6 | 265.3 | 29.7 |

AIR

Air Quality & Stationary Source Planning & Standards

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| TOTAL WORKYEARS | | | | | |
| Emission Standards & Technology Assessment | 97.9 | 123.1 | 123.1 | 151.0 | 27.9 |
| National Pollutant Policies, Strategies, and Rules | 41.3 | | | | 0.0 |
| State Program Policy Guidelines & Air Standards Development | 100.5 | 112.5 | 112.5 | 114.3 | 1.8 |
| TOTAL WORKYEARS | 239.7 | 235.6 | 235.6 | 265.3 | 29.7 |

## Air Quality and Stationary Source Planning and Standards

Budget Request

The Agency requests a total of $47,761,400 supported by 265.3 total workyears for 1992, an increase of $12,579,700 and 29.7 in total workyears from 1991. Of the request, $17,849,400 will be for the Salaries and Expenses appropriation and $29,912,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of $2,479,700 and an increase of $10,100,000 in the Abatement, Control and Compliance appropriation.

EMISSION STANDARDS AND TECHNOLOGY ASSESSMENT

1992 Program Request

The Agency requests a total of $32,188,000 supported by 151.0 total workyears for this program, of which $10,159,300 will be for the Salaries and Expenses appropriation and $22,028,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $2,146,200 Salaries and Expenses appropriation, an increase of $7,900,000 in the Abatement, Control and Compliance appropriation, and an increase of 27.9 in total workyears from 1991. The increase will be used for new and expanded activities needed to implement air toxics and nonattainment provisions of the Clean Air Act Amendments of 1990.

The major goal of this program is implementation of the Clean Air Act Amendments of 1990, enacted in November 1990. Program activities will focus specifically on the implementation of Titles I (nonattainment), III (general), and V (permits and fees). These titles contain many activities that have near-term deadlines (i.e., within the first three years after enactment). Meeting these deadlines is an Agency priority.

The major effort of this program will continue to be achieving reductions in air toxics, including the development of MACT standards for high priority pollutants and source categories. Work will continue on developing and promulgating MACT standards for at least 40 source categories and coke ovens to meet the two-year deadline in the new Clean Air Act amendments. Work will continue on developing MACT standards for additional categories to help meet the four-year deadline in the new Act. Work will also concentrate on developing a schedule for the development of MACT standards for all listed source categories; responding to petitions to add or delete pollutants; continuing a study on the deposition of hazardous air pollutants in the Great Lakes; developing standards for medical waste incinerators and small municipal waste combustors; and supporting the National Academy of Sciences in their review of EPA's risk assessment procedures and methodology. These activities focus primarily on reducing the more than 1300-1600 cancer deaths per year and high individual risks that are estimated to result from large stationary sources of toxic air pollutants.

To support the ozone nonattainment efforts required by Title I, work will continue on developing control technology guidelines (CTGs) for 11 source categories of volatile organic compound emissions and an alternative control technology document for sources of nitrogen oxides; preparing a study on volatile organic compound emissions from consumer and commercial products; and developing standards for marine vessels. Work will continue on the development of reasonably available control measures (RACMs) and best available control measures (BACMs) and CTGs for major particulate matter (PM-10) sources including the initiation of work on new source categories. Work will also continue on the revision of the sulfur dioxide NSPSs for electric utilities.

Consistent with the new Act amendments, implementation support will also be provided to state air toxic pollutant control programs through the operation of four centers and clearinghouses and the publication of implementation support and technology transfer documents for air toxics, ozone, and PM-10 control. Support will also be provided to the states to assist them in the development of permit programs for air toxics.

1991 Program

In 1991 the Agency is allocating a total of $22,141,800 supported by 123.1 total workyears for this program, of which $8,013,100 is from the Salaries and Expenses appropriation and $14,128,700 is from the Abatement, Control and Compliance appropriation.

The Clean Air Act Amendments of 1990 set forth a greatly expanded set of requirements for developing standards for both criteria and hazardous air pollutants. A major program emphasis in 1991 continues to be air toxics, including development of MACT standards under section 112 and other authorities for high priority pollutants and source categories. As a result of the new amendments, work is concentrating on developing a list of the major source categories and subcategories which emit the 189 listed hazardous air pollutants; continuing work on developing MACT for the high priority source categories; responding to petitions to add or delete pollutants on the list; developing guidelines on making "early reduction" determinations and implementing the modification provisions; and initiating a study on the deposition of hazardous air pollutants in the Great Lakes. During 1991, significant effort is also being expended developing MACT standards for 40 source categories or subcategories and coke ovens in order to meet the two-year requirements of the new Act. Effort also are being directed toward developing MACT standards for source categories associated with four-year requirements.

In 1991 New Source Performance Standards (NSPS) development continues. By the end of 1991, 46 NSPSs will have been promulgated from the priority list. An additional NSPS will be promulgated for large municipal waste combustors, a category that has not been added to the priority list. A major effort will continue on three other source categories that have not been added to the priority list: small municipal waste combustors, medical waste incinerators, and landfills. Development of the final six NSPSs on the priority list has been deferred due to higher priority work.

To support efforts in the area of ozone nonattainment, work will continue on developing CTGs for 11 source categories of volatile organic compound

emissions and an alternative control technology document for sources of nitrogen oxides. Consistent with the provisions of the new amendments, implementation support will also be provided to state air toxic pollutant control programs through the operation of four centers and clearinghouses and the publication of implementation support and technology transfer documents for air toxics, ozone, and PM-10 control.

1990 Accomplishments

In 1990 the Agency obligated a total of $13,690,800 supported by 97.9 total workyears, of which $6,153,600 was from the Salaries and Expenses appropriation and $7,537,200 was from the Abatement, Control and Compliance appropriation.

In 1990 three NSPSs were promulgated. Two NSPSs addressed volatile organic compound emissions from chemical manufacturing; one addressed emissions from small steam generating units. Rules were also promulgated for chromium (comfort cooling towers) under the Toxic Substances Control Act and for four source categories of benzene emissions under section 112 of the Clean Air Act. Two NSPSs were proposed. One addressed volatile organic compound emissions from chemical manufacturing reactor processes and another covered emissions from large municipal waste combustors. Work was also initiated on developing MACT standards for high priority source categories in anticipation of amendments to the Clean Air Act.

## NATIONAL POLLUTANT POLICIES, STRATEGIES AND RULES

1992 Program Request

The program activities in 1992 are described in the Atmospheric and Indoor Air Programs subactivity.

1991 Program

The program activities in 1991 are described in the Atmospheric and Indoor Air Programs subactivity.

1990 Accomplishments

In 1990 the Agency obligated a total of $11,410,200 supported by 41.3 total workyears, of which $2,796,700 was from the Salaries and Expenses appropriation and $8,613,500 was from the Abatement, Control and Compliance appropriation.

In 1990 the principal efforts and accomplishments of the acid rain program were conducting detailed legislative analyses, preparing materials in support of the President's legislative initiative, and initiating advance program development activities focusing on anticipated actions under the new Clean Air Act. The program also provided technical assistance and environmental policy support to the Department of Energy (DOE) on its clean coal technology program. The acid rain program continued to review, comment on, and resolve controversial air permit issues for clean coal technology and other non-clean coal technology innovative control projects. In 1990 the program represented the Agency on the

Interagency Policy Committee of the National Acid Precipitation Assessment Program (NAPAP) and provided research information and policy guidance for completion of the 27 state-of-the-science reports and the 1990 integrated assessment. In 1990 the program also continued responses to legal petitions calling for control of United States sulfur dioxide and nitrogen oxides emissions sufficient to mitigate adverse impacts on Canada. The acid rain program supported the Administration in formal negotiations, which began in 1990, with Canada on a bilateral air quality accord.

In 1990 the indoor air program focused on coordination of EPA and Federal indoor air quality activities, analysis of the appropriate Federal role in addressing indoor air quality issues, and preparation and dissemination of informational materials on indoor air quality for the general public. In 1990 the indoor air program completed a survey of indoor air quality diagnostic and mitigation firms and a technical document on residential air cleaning devices. In addition, in-house staff carried out an Agency and interagency coordination role and continued to develop and update indoor air pollution and mitigation fact sheets. Two directories published by the program were updated and reissued: the Current Federal Indoor Air Quality Activities guide; and the Directory of State Indoor Air Contacts.

Guidance documents progressed to the external review stage for: (1) policymakers on workplace smoking policies, (2) homebuilders on indoor air quality considerations in new home construction, and (3) building owners and managers on preventing, diagnosing, and mitigating indoor air problems in large buildings. A self-paced comprehensive training guide on indoor air quality progressed to the clearance stage and will be made available to a broad range of interested audiences in 1991. A draft formal risk assessment on lung cancer and respiratory disease from environmental tobacco smoke, which was sponsored by the indoor air program, was completed and transmitted to the Science Advisory Board for review. Major new activities focused on: reviewing options for establishing a national indoor air quality information clearinghouse; initiating a study of research needs on the issue of multiple chemical sensitivity; developing data on the impact of indoor air pollution on productivity and on the costs of correcting indoor air pollution; and exploring mechanisms for credentialling professionals who offer indoor air diagnostic and mitigation services. A multi-year program to provide training for state and local governments on indoor air quality was initiated with the development of an introductory course on indoor air quality.

On the international front in 1990, the proceedings from a workshop hosted by the indoor air program under the auspices of the North Atlantic Treaty Organization Committee on Challenges for Modern Society on strategies for managing risks of indoor air quality was published, and a project to compile an international inventory of indoor air activities advanced to the information collection phase.

In 1990 the global change program activities focused on implementation of the domestic rule for control of production and consumption of CFCs and halons. The program continued to enforce the regulation, implemented a tracking system for permits, implemented a reporting and record-keeping system, refined the enforcement strategy, and evaluated the market responses to regulation. The program also initiated the development of a national CFC and halons recycling program and expanded its efforts for alternative chemicals and safe use of those

chemicals. Internationally, the global change program supported program activities and provided technical assistance to the United Nations Environment Program (UNEP) to support international implementation of the Montreal Protocol. The program coordinated activities for developing alternative technologies. Transfer of these technologies to lesser developed countries continued at an accelerated rate.

In 1990 the global change program participated in a series of assessments required by the Montreal Protocol and was involved in a legal working group and in ad hoc negotiating groups to meet the Agency's responsibilities for technology transfer required under the Protocol. In addition, the Agency was involved in efforts to encourage other nations, particularly lesser developed countries, to sign the Protocol and to support the United States in further negotiations on protocol revisions. The program played a lead role in the negotiations on the London amendments to the Montreal Protocol. These amendments included phasing out CFCs and other ozone-depleting chemicals and establishing a fund for developing countries to support compliance with the Protocol.

The global change program continued to assess other possible factors in tropospheric climate changes. This included the assessment of point and non-point emission sources of global warming gases, the techniques for control of methane emissions, and potential control technologies.

## STATE PROGRAM GUIDELINES AND AIR STANDARDS DEVELOPMENT

### 1992 Program Request

The Agency requests a total of $15,573,400 supported by 114.3 total workyears for this program, of which $7,690,100 will be for the Salaries and Expenses appropriation and $7,883,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $333,500 in the Salaries and Expenses appropriation, an increase of $2,200,000 in the Abatement, Control and Compliance appropriation, and an increase of 1.8 in total workyears from 1991. The increase will be used for new and expanded activities needed to implement provisions of the Clean Air Act Amendments of 1990.

Final action on revised or reaffirmed National Ambient Air Quality Standards (NAAQSs) for lead and sulfur dioxide will be nearing completion. Revised sulfur dioxide significant harm levels and associated implementation guidance will also be developed. Benefits, health, and regulatory impact assessment support will be provided to programs for NSPSs and National Emission Standards for Hazardous Air Pollutants (NESHAPs) and to support state and Federal rulemaking activities. Guidance on market-based state implementation plan strategies will be provided.

Guidance, regulations, assistance, and training needed to implement the state implementation plan activities under the Clean Air Act Amendments of 1990 will be provided, including issuing economic incentive rules, sanctions criteria, revising and issuing the list of nonattainment areas, and establishing and assisting ozone and visibility transport commissions. Procedures, techniques, and assistance for determining required emission reductions, evaluating and

selecting alternative control measures, preparing control strategy demonstrations, analyzing transport strategies in the Northeast, implementing effective tracking mechanisms, and assistance in identifying, adopting, and implementing non-traditional control measures that will directly involve the public (e.g., transportation controls and consumer solvent substitution) will be provided. Existing Federal implementation plan commitments, as they may be modified by court order, will be carried out. Initial state implementation plan submittals will be reviewed and approved or disapproved. Federal rules for disapproved state plans will be developed as necessary. RACM and BACM documents and other PM-10 guidance on woodstoves, prescribed burning, agricultural activities, fugitive source and nontraditional source control measures (e.g., street cleaning), and secondary particle formation will be issued. The report to Congress on the impact of the Clean Air Act on visibility will be nearing completion. Guidance on integration of sulfur control programs (e.g., state implementation plans and acid rain activities) will be provided.

The new source review program will provide guidance and assistance to Regions and states permitting new sources. Rules to implement a variety of changes to the new source review program in the 1990 Act amendments will be promulgated. Guidance, assistance, and training to implement new legislation relating to operating permits will be provided. Regulations for Federally-issued operating permits will be promulgated.

1991 Program

In 1991 the Agency is allocating a total of $13,039,900 supported by 112.5 total workyears for this program, of which $7,356,600 is from the Salaries and Expenses appropriation and $5,683,300 is from the Abatement, Control and Compliance appropriation.

The lead NAAQS review will be completed and a proposal to revise or reaffirm this standard will be prepared. Revised or reaffirmed NAAQSs for sulfur dioxide will be reproposed or promulgated. The criteria document for the carbon monoxide NAAQS reviews will be completed and the staff paper reviewed by the Clean Air Scientific Advisory Committee.

Guidance and regulations needed to implement state implementation plan activities under the Clean Air Act Amendments of 1990 will be developed, including developing completeness criteria, economic incentive rules, sanctions criteria, revising and issuing the list of nonattainment areas, and establishing ozone and visibility transport commissions. Procedures and techniques for determining required emission reductions, evaluating and selecting alternative control measures, preparing control strategy demonstrations, analyzing transport strategies in the Northeast, and assistance in identifying, adopting, and implementing nontraditional control measures that will directly involve the public (e.g., transportation controls and consumer solvent substitution) will be developed. Existing Federal implementation plan commitments, as they may be modified by court order, will be carried out. Initial ozone state implementation plan submittals due by May 15, 1991 will be reviewed and approved or disapproved; Federal rules for disapproved state plans will be developed. RACM and BACM documents and other PM-10 guidance on woodstoves, prescribed burning, agricultural activities, fugitive source and nontraditional source control measures (e.g., street cleaning), and secondary particle formation will be

developed. Management and review of state implementation plans submitted by states will continue. Regulations to control sources contributing to visibility impairment in the Grand Canyon will be promulgated. Innovative measures to reduce the backlog of state implementation plan revisions and expedite processing, including a computerized tracking and information system, will be fully implemented.

The new source review program will provide guidance and assistance to Regions and states permitting new sources and support to national litigation over current regulations. Rulemaking to implement a variety of changes to the new source review program in the new Act will be proposed. Guidance and regulations needed to implement new legislation relating to operating permits, including model permits, standardized application forms, fee recovery requirements, and monitoring/reporting requirements will be proposed and promulgated. Regulations for Federally-issued operating permits will also be proposed.

1990 Accomplishments

In 1990 the Agency obligated a total of $9,869,100 supported by 100.5 total workyears to this program, of which $5,926,800 was from the Salaries and Expenses appropriation and $3,942,300 was from the Abatement, Control and Compliance appropriation. In the state implementation plan program, primary emphasis was on implementing ongoing programs for carbon monoxide and ozone nonattainment areas and developing and reviewing PM-10 plans. For ozone and carbon monoxide, these activities focused on ensuring compliance with calls for revised state plans issued by EPA in May 1988 and November 1989, securing and reviewing revised emission inventories and missing or inadequate rules. PM-10 plan submittals were reviewed. Prevention of significant deterioration increments were proposed for PM-10. Regulations to control sources contributing to visibility impairment in the Grand Canyon were proposed. Guidance and assistance to Regional Offices were provided for developing court-ordered Federal implementation plans for ozone, carbon monoxide, and PM-10 nonattainment areas.

AIR

Mobile Source Air Pollution Control & Fuel Economy

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Mobile Source Program Implementation | | | | | |
| Salaries & Expenses | | | | $1,664.5 | $1,664.5 |
| TOTAL | | | | $1,664.5 | $1,664.5 |
| Emission Standards, Technical Assessment & Characterization | | | | | |
| Salaries & Expenses | $5,192.1 | $7,256.1 | $7,256.1 | $10,376.9 | $3,120.8 |
| Abatement Control and Compliance | $5,866.5 | $11,949.7 | $11,949.7 | $18,769.7 | $6,820.0 |
| TOTAL | $11,058.6 | $19,205.8 | $19,205.8 | $29,146.6 | $9,940.8 |
| Testing, Technical & Administrative Support | | | | | |
| Salaries & Expenses | $5,766.4 | $7,422.5 | $7,422.5 | $6,775.1 | -$647.4 |
| Abatement Control and Compliance | $650.0 | $850.2 | $850.2 | $2,600.2 | $1,750.0 |
| TOTAL | $6,416.4 | $8,272.7 | $8,272.7 | $9,375.3 | $1,102.6 |
| Emissions & Fuel Economy Compliance | | | | | |
| Salaries & Expenses | $2,166.4 | $2,428.5 | $2,428.5 | $3,209.3 | $780.8 |
| Abatement Control and Compliance | $29.5 | $133.1 | $133.1 | $263.1 | $130.0 |
| TOTAL | $2,195.9 | $2,561.6 | $2,561.6 | $3,472.4 | $910.8 |
| TOTAL: | | | | | |
| Salaries & Expenses | $13,124.9 | $17,107.1 | $17,107.1 | $22,025.8 | $4,918.7 |
| Abatement Control and Compliance | $6,546.0 | $12,933.0 | $12,933.0 | $21,633.0 | $8,700.0 |
| Mobile Source Air Pollution Control & Fuel Economy TOTAL | $19,670.9 | $30,040.1 | $30,040.1 | $43,658.8 | $13,618.7 |
| **PERMANENT WORKYEARS** | | | | | |
| Mobile Source Program Implementation | | | | 31.4 | 31.4 |
| Emission Standards, Technical Assessment & Characterization | 82.6 | 111.3 | 111.3 | 150.4 | 39.1 |
| Testing, Technical & Administrative Support | 92.3 | 94.4 | 94.4 | 100.7 | 6.3 |

AIR

Mobile Source Air Pollution Control & Fuel Economy

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| Emissions & Fuel Economy Compliance | 31.8 | 37.1 | 37.1 | 47.7 | 10.6 |
| TOTAL PERMANENT WORKYEARS | 206.7 | 242.8 | 242.8 | 330.2 | 87.4 |
| TOTAL WORKYEARS | | | | | |
| Mobile Source Program Implementation | | | | 31.4 | 31.4 |
| Emission Standards, Technical Assessment & Characterization | 92.6 | 111.3 | 111.3 | 150.4 | 39.1 |
| Testing, Technical & Administrative Support | 95.8 | 94.4 | 94.4 | 100.7 | 6.3 |
| Emissions & Fuel Economy Compliance | 36.3 | 37.1 | 37.1 | 47.7 | 10.6 |
| TOTAL WORKYEARS | 224.7 | 242.8 | 242.8 | 330.2 | 87.4 |

## Mobile Source Air Pollution Control and Fuel Economy

Budget Request

The Agency requests a total of $43,658,800 supported by 330.2 total workyears for 1992, an increase of $13,618,700 and an increase of 87.4 total workyears from 1991. Of the request, $22,025,800 will be for the Salaries and Expenses appropriation and $21,633,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $4,918,700 in the Salaries and Expenses appropriation and an increase of $8,700,000 in the Abatement, Control and Compliance appropriation.

In 1992 the Agency expects to collect up to $7,000,000 in fees from the mobile source program, including Fuel Economy, Certification and Recall.

### MOBILE SOURCE PROGRAM IMPLEMENTATION

1992 Program Request

The Agency requests a total of $1,664,500 supported by 31.4 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of $1,664,500 in the Salaries and Expenses appropriation, and an increase of 31.4 total workyears. Funding for regional support for Mobile Sources was previously in program element Air Quality Management Implementation. The increases will continue support to the operation of the mobile source-related support program within each of the Agency's ten Regional offices.

The Regional program will continue to provide policy guidance and technical support to states developing and implementing motor vehicle inspection and maintenance programs as part of their state implementation plans. They will continue to provide guidance in the development of mobile source emissions inventories, transportation control measures, and making conformity determinations. They also will continue to support the states in the development and implementation of other programs mandated by the Clean Air Act Amendments of 1990, including the oxygenated fuels and clean fuel fleet programs. The Regions will continue to review program proposals and implementation plans and provide appropriate guidance. The Regions will continue to audit individual state programs and make determinations as to the consistency with implementation plans and program effectiveness.

1991 Program

The 1991 program can be found under Air Quality Management Implementation.

1990 Accomplishments

The 1990 accomplishments can be found under Air Quality Management Implementation.

## EMISSION STANDARDS, TECHNICAL ASSESSMENT AND CHARACTERIZATION

### 1992 Program Request

The Agency requests a total of $29,146,600 supported by 150.4 total workyears for this program, of which $10,376,900 will be for the Salaries and Expenses appropriation and $18,769,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $3,120,800 in the Salaries and Expenses appropriation, an increase of $6,820,000 in the Abatement, Control and Compliance appropriation, and an increase of 39.1 total workyears. The increases reflect the additional resources needed to continue the implementation of new and expanded requirements in the Clean Air Act Amendments of 1990.

In 1992 the mobile source standards program will continue the development of the aggressive program outlined in the Clean Air Act Amendments of 1990. Regulatory work will continue on clean fuels and will result in the promulgation of clean fuel vehicle credit programs (for fleets and California Programs) and standards for vehicles fueled by compressed natural gas. Clean fuel vehicle standards will be proposed. Tier 1 tailpipe standards will be implemented. The study of air toxics related to mobile sources will be published. The Emissions Factor Program will continue its efforts in determining emissions from in-use vehicles. These efforts will provide pertinent information for air quality modeling by the Agency and state and local jurisdictions. The Emissions Factor Program increases will focus on emissions from in-use vehicles using oxygenated fuels, variables related to non-Federal test procedure conditions, and new technology heavy-duty engines. In addition, a study of emissions from non-road vehicles will be published.

Guidance for basic vehicle inspection and maintenance and enhanced inspection and maintenance will be implemented. EPA will provide technical support to state and local jurisdictions enhancing existing programs (approximately 47 programs in serious or worse ozone nonattainment areas) or developing new programs (approximately 26 new basic programs in moderate ozone nonattainment areas) as mandated by the new Clean Air Act amendments. Technical support will also be provided for implementing other mobile source related pollution abatement programs, such as transportation control measures, mandated by the new amendments. In addition, audits and follow-ups of state and local inspection and maintenance programs will continue. EPA will promulgate regulations which require all gasoline sold in the nine worst ozone non-attainment areas be reformulated to be less polluting.

### 1991 Program

The Agency is allocating a total of $19,205,800 supported by 111.3 total workyears for this program, of which $7,256,100 is from the Salaries and Expenses appropriation and $11,949,700 is from the Abatement, Control and Compliance appropriation. These resources support the implementation of the Clean Air Act Amendments of 1990.

In 1991 the mobile source standards program begins the development of the aggressive program outlined in the Clean Air Act Amendments of 1990. Regulatory work on clean fuels will result in proposals of clean fuel vehicle credit programs and compressed natural gas vehicle standards. Tier 1 tailpipe standards

will be promulgated. Work will begin on a study of air toxics related to mobile sources. The Emissions Factor Program will continue to determine emissions from in-use vehicles to provide pertinent information for air quality modeling by the Agency and state and local jurisdictions. Work will begin on a study to assess the impact on air quality of emissions from non-road vehicles and engines.

Guidance for basic inspection and maintenance and enhanced inspection and maintenance will be published. In addition, 15 audits and follow-ups of state and local inspection and maintenance programs will be completed. EPA will also promulgate regulations requiring that all gasoline sold in the nine worst ozone non-attainment areas be reformulated to be less polluting.

1990 Accomplishments

In 1990 the Agency obligated a total of $11,058,600 supported by 92.6 total workyears for this program, of which $5,192,100 was from the Salaries and Expenses appropriation and $5,866,500 was from the Abatement, Control and Compliance appropriation.

In 1990 the standards program continued to emphasize control of ozone precursors and air toxics. Work on clean fuels included emissions characterization and technology assessment for fuels such as compressed natural gas, alcohol, and propane. The regulatory program continued to concentrate on control of excess hydrocarbon emissions, formaldehyde, methanol, and particulates, as well as fuels. Revised light-duty truck hydrocarbon standards were proposed. The final rules for controlling diesel fuel composition and Phase II gasoline volatility were published. Also, the final rule for heavy-duty emissions banking and trading was published. Testing of in-use vehicles to develop emission factors was conducted. A pilot study was initiated to assess alternative sampling methodologies for developing in-use emission factors. The objective was 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 continued 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 were completed. Work continued on the development of the transportation control measures guidance.

TESTING, TECHNICAL AND ADMINISTRATIVE SUPPORT

1992 Program Request

The Agency requests a total of $9,375,300 supported by 100.7 total workyears for this program, of which $6,775,100 will be for the Salaries and Expenses appropriation and $2,600,200 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of $647,400 in the Salaries and Expenses appropriation, an increase of $1,750,000 in the Abatement, Control and Compliance appropriation, and an increase of 6.3 total workyears. The increases will support implementation of the Clean Air Act Amendments of 1990.

This program will continue to 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. Testing will increase on in-use vehicles in support of the emissions factors and

recall programs. Approximately 2,200 in-use vehicle tests will be performed at the MVEL. In addition, tests on new and in-use heavy-duty engines will continue to be conducted to support the implementation and enforcement of the standards for these engines. General activities will continue to support 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 will also continue to provide: 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 fuel samples collected for enforcement purposes (including volatility control) will increase as enforcement of the Phase II gasoline volatility rules begins.

1991 Program

The Agency is allocating a total of $8,272,700 supported by 94.4 total workyears for this program, of which $7,422,500 is from the Salaries and Expenses appropriation and $850,200 is from for the Abatement, Control and Compliance appropriation. This will support the implementation of the Clean Air Act Amendments of 1990.

In 1991 this program provides testing, technical, and administrative support to the operating programs of the Office of Mobile Sources at the MVEL. Approximately 1,000 tests will be performed on prototype vehicles and 1,600 tests on in-use vehicles in support of the emissions factors and recall programs. In addition, tests on new and in-use heavy-duty engines will be conducted to support the implementation and enforcement of the standards for these engines. General activities will support 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 will also provide: 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. Activities related to converting the MVEL into a Federal facility are supported. Testing and analysis of approximately 9,300 fuel samples collected for enforcement purposes (including volatility control) will continue.

1990 Accomplishments

In 1990 the Agency obligated a total of $6,416,400 supported by 95.8 total workyears for this program, of which $5,766,400 was from the Salaries and Expenses appropriation and $650,000 was from the Abatement, Control and Compliance appropriation.

The 1990 program focused 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 produced approximately 2,600 tests. 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 3,900 fuel samples collected in the field were completed to continue enforcement of fuels regulations for volatility and contaminants. Correlation programs to maintain equivalent test procedures between manufacturers and EPA continued. Test equipment maintenance, calibration, and repair services were provided. The adequacy of existing procedures and equipment to test newer technology vehicles was evaluated. When necessary, new equipment and procedures were designed. In addition, personnel, facility support services, safety, ADP, and administrative management functions continue to be provided at the MVEL.

## EMISSIONS AND FUEL ECONOMY COMPLIANCE

### 1992 Program Request

The Agency requests a total of $3,472,400 supported by 47.7 total workyears for this program, of which $3,209,300 will be for the Salaries and Expenses appropriation and $263,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $780,800 in the Salaries and Expenses appropriation, an increase of $130,000 in the Abatement, Control and Compliance appropriation, and an increase of 10.6 total workyears. The increases will support implementation of the Clean Air Act Amendments of 1990.

The emissions certification program will continue to assess the validity of applications for certification of 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.

In 1992 the in-use assessment program will continue to focus on the effectiveness of on-board diagnostic systems in identifying component failure. Rules to standardize such systems will be promulgated and implemented. Work will continue on suspected problems with manufacturers' alleged use of defeat devices. As required by the Amendments to the Clean Air Act of 1990, a study of the Federal test procedures to determine if the procedures driving cycles and test parameters remain representative of in-use conditions will be published. In addition, rules to incorporate into the Federal test procedure an inspection and maintenance short test cycle to improve the effectiveness of inspection and maintenance programs will be promulgated.

The statutory fuel economy information program will continue to produce labels, Corporate Average Fuel Economy (CAFE) calculations, and data for the Gas Mileage Guide, in accordance with the revised CAFE and fuel economy labeling requirements. EPA will promulgate revisions to light-duty durability procedures. Revisions will include improvements to the current mileage accumulation cycle and provision for alternative accelerated durability procedures.

1991 Program

The Agency is allocating a total of $2,561,600 supported by 37.1 total workyears for this program, of which $2,428,500 is from the Salaries and Expenses appropriation and $133,100 is from the Abatement, Control and Compliance appropriation. These resources support implementation of the Clean Air Act Amendment of 1990.

The emissions certification program will continue to assess the validity of 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. Approximately 40 certificate holders will be bringing non-conforming imports into compliance.

In 1991 the in-use assessment program will continue to focus on the effectiveness of on-board diagnostic systems in identifying component failure. Rules to standardize such systems will be proposed. Work will continue on suspected problems with manufacturers' use of defeat devices. As required by the Amendments to the Clean Air Act of 1990, a study will be undertaken to assess the validity of the Federal test procedure and promulgate revisions if appropriate. In addition, work will be undertaken to incorporate into the Federal test procedure an inspection and maintenance short test cycle to improve the effectiveness of inspection and maintenance programs. Rules to implement these Federal test procedure changes and the mobile source fees program will be promulgated.

The statutory fuel economy information program will be carried out, with the provision of 1,000 labels, 50 Corporate Average Fuel Economy (CAFE) calculations, and data for the Gas Mileage Guide. Revised CAFE and fuel economy labeling rules required by the Alternative Motor Fuels Act (AMFA) will be published. Guidance to manufacturers on implementing the changes required by these revisions will be provided. A report to Congress (also required by the AMFA) will be issued. EPA will propose revisions to light-duty durability standards. Anticipated revisions will include improvements to the current mileage accumulation cycle and provision for alternative accelerated durability procedures.

1990 Accomplishments

In 1990 the Agency obligated a total of $2,195,900 supported by 36.3 total workyears for this program, of which $2,166,400 was from the Salaries and Expenses appropriation and $29,500 was from the Abatement, Control and Compliance appropriation.

The emissions certification program continued 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 continued to increase. EPA issued 31 certificates of conformity to Independent Commercial Importers (ICI). Certification engineering review continued to deter the production of vehicle designs incapable of meeting emission standards. In 1990 the in-use program placed emphasis on assessment of emission control diagnostic systems and their effectiveness in isolating emission control component failure. A rule to

standardize these systems was drafted. Work also focused on suspected problems with manufacturers' use of defeat devices, as well as on emissions under conditions different from the Federal test procedure.

The statutory fuel economy information program was carried out, with 1,300 labels, 66 CAFE calculations, and data for the Gas Mileage Guide was produced. Revised CAFE and fuel economy labeling rules required by AMFA were proposed.

AIR
State Programs Resource Assistance

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Control Agency Resource Supplementation | | | | | |
| Abatement Control and Compliance | $99,098.3 | $138,275.0 | $138,275.0 | $162,700.0 | $24,425.0 |
| TOTAL | $99,098.3 | $138,275.0 | $138,275.0 | $162,700.0 | $24,425.0 |
| Training | | | | | |
| Salaries & Expenses | $270.3 | $259.1 | $259.1 | $269.1 | $10.0 |
| TOTAL | $270.3 | $259.1 | $259.1 | $269.1 | $10.0 |
| TOTAL: | | | | | |
| Salaries & Expenses | $270.3 | $259.1 | $259.1 | $269.1 | $10.0 |
| Abatement Control and Compliance | $99,098.3 | $138,275.0 | $138,275.0 | $162,700.0 | $24,425.0 |
| State Programs Resource Assistance TOTAL | $99,368.6 | $138,534.1 | $138,534.1 | $162,969.1 | $24,435.0 |
| **PERMANENT WORKYEARS** | | | | | |
| Training | 4.0 | 4.0 | 4.0 | 4.0 | 0.0 |
| TOTAL PERMANENT WORKYEARS | 4.0 | 4.0 | 4.0 | 4.0 | 0.0 |
| TOTAL WORKYEARS | 4.0 | 4.0 | 4.0 | 4.0 | 0.0 |
| Training | 4.0 | 4.0 | 4.0 | 4.0 | 0.0 |
| TOTAL WORKYEARS | 4.0 | 4.0 | 4.0 | 4.0 | 0.0 |

## State Programs Resource Assistance

Budget Request

The Agency requests a total of $162,969,100 supported by 4.0 total workyears for 1992, an increase of $24,435,000 and no change in total workyears from 1991. Of the request, $269,100 will be for the Salaries and Expenses appropriation and $162,700,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of $10,000 and an increase of $24,425,000 in the Abatement, Control and Compliance appropriation.

CONTROL AGENCY RESOURCE SUPPLEMENTATION

1992 Program Request

The Agency requests a total of $162,700,000 all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of $24,425,000 which will support implementation of new or expanded requirements in the Clean Air Act Amendments of 1990, particularly in the areas of NAAQSs nonattainment, air toxics, acid rain, and operating permit programs.

In 1992 the control agency support program will focus on implementation of the requirements contained in the Clean Air Act Amendments of 1990. A major portion of this effort will be directed towards the development and revision of state implementation plans for the purpose of demonstrating attainment of the NAAQSs for ozone, carbon monoxide, PM-10, sulfur dioxide, and lead. Mobile source control programs including enhanced vehicle inspection and maintenance programs, stage II vapor recovery programs, and transportation control measures will be developed and implemented. Efforts will also focus on completing and submitting draft inventories for all carbon monoxide and ozone nonattainment areas and for revising them in response to EPA reviews. Quality assurance efforts will continue until the final submissions are made early in 1993. Emissions databases will be developed for use in concert with photochemical dispersion models that must be developed for multi-state ozone nonattainment areas. PM-10 activities will focus on new PM-10 nonattainment areas that must develop SIP revisions and control strategies that demonstrate attainment of the PM-10 air quality standard. Inventories for the initial PM-10 nonattainment areas will be submitted and work on inventories for additional PM-10 nonattainment areas will be initiated. In order to fulfill specific requirements addressing fugitive emissions from surface coal mines, efforts will focus on compiling source and meteorological data to be used in EPA evaluations of current dispersion models.

In 1992 state efforts will focus on development of comprehensive permit programs that will meet EPA requirements. States will be required to develop and implement operating permit programs that will require all major sources to apply for and obtain permits to operate.

In 1992 a multi-year monitor replacement effort will continue. This effort will upgrade and replace worn-out or obsolete monitors that are currently being used by the states. In addition, a pilot program will be initiated to develop air toxics monitoring that will support studies of the Great Lakes and other boundary waters.

As rule-effectiveness criteria are developed and as the cut-off size of major sources is expanded to encompass a larger universe of sources, enhanced enforcement and compliance tracking requirements will be stipulated for state and local agencies. States will develop and improve compliance management and tracking systems and compliance forecasting systems. In addition, states will focus on carrying out radionuclide enforcement activities. States will also focus on developing expertise necessary for successful implementation of the acid rain program.

1991 Program

In 1991 the Agency is allocating a total of $138,275,000 all of which is from the Abatement, Control and Compliance appropriation.

In 1991 a major focus of the control agency support program is the implementation of the requirements contained in the Clean Air Act Amendments of 1990. States will validate and refine air quality data needed to define certain portions of their respective states as nonattainment areas for ozone, carbon monoxide, PM-10 and sulfur dioxide. The classification of these areas as nonattainment will invoke a number of planning and control requirements that will result in almost all states revising their implementation plans to demonstrate attainment of the NAAQSs by the applicable deadlines. Efforts to correct and modify existing RACT regulations for volatile organic compounds and efforts to expand the inspection and improve the compliance of Class A and B sources of volatile organic compounds in nonattainment areas are continuing. A major objective in 1991 is to develop draft year-of-enactment inventories for all point sources and to initiate work on area and mobile source inventories for all ozone and carbon monoxide nonattainment areas. States will be adopting and implementing additional mobile source control programs, including enhanced vehicle inspection and maintenance programs, and regulations addressing gasoline vapor recovery systems and oxygenated fuel requirements. States will also be analyzing the effectiveness of current volatile organic compound control programs in order to correct these programs as necessary. Follow-on efforts within the Northeast to apply the regional ozone model to identify transport and assess control options over large areas continue. Major efforts are underway to develop other data bases needed for attainment demonstration modeling such as non-methane organic compound data. Efforts to develop projection year inventories were begun during 1991.

State and local agencies are initiating activities to develop and adopt new operating permit program requirements. States are also continuing various elements of their multi-year plans for building and implementing programs for assessing and reducing exposure to air toxics and are reviewing their program capabilities to implement new toxic program requirements. States are developing required state implementation plan revisions and inventories for those areas designated nonattainment for PM-10 and sulfur dioxide. In addition, states are performing necessary analyses and preparing plan revisions to meet the NAAQS for lead where nonattainment problems have been identified. States will be verifying

emission inventory data for power plants and utility boilers to meet acid rain program requirements.

Ambient monitoring efforts to expand and enhance monitoring sites for ozone, carbon monoxide, and PM-10 are underway. In addition, states will begin a multi-year effort to replace obsolete and worn-out monitors. The establishment of additional continuous monitoring sites for ozone precursors such as nonmethane organic compounds and nitrogen dioxide are being completed. States continue to operate sulfur dioxide monitoring networks and inspect major sulfur dioxide sources. State prevention of significant deterioration and new source review 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 demolition and renovation regulations and taking appropriate follow-up action. In addition, states are continuing to fully operate and monitor the quality of the National Air Monitoring System and State and Local Air Monitoring System networks and to assume responsibility for newly promulgated NSPSs and NESHAPs.

Congressional Directives. A total of $575,000 is for four Congressionally directed projects: Northeast interstate nonattainment and visibility problems, Sacramento air quality modeling study, the South Coast Air Quality Management District's alternative fuels options demonstration project, and the high altitude testing laboratory in Denver, Colorado.

1990 Accomplishments

In 1990 the Agency obligated a total of $99,098,300 all of which was from the Abatement, Control and Compliance appropriation.

In 1990 much of the control agency support program focused on the implementation of the Agency's post-1987 attainment requirements for ozone and carbon monoxide nonattainment areas. States worked on revisions to their implementation plans required by EPA's May 1988 and November 1989 calls for plan revisions. Efforts to correct and modify existing RACT regulations and other control measures for volatile organic compounds continued. Draft base year emissions inventories for ozone and carbon monoxide nonattainment areas were completed in 1990 with revisions, updates, and improved quality assurance reviews continuing. The collection of nonmethane organic compound and nitrogen oxides data continued. States also continued to analyze the effectiveness of current volatile organic compound control programs in order to determine the need to modify these programs. Efforts to expand the Class A and B volatile organic compound source inspection program and the compliance level of these sources continued. Efforts to identify long-range transport and assess control options over large areas continued in the Northeast.

States continued to prepare required PM-10 implementation plans for Group I areas. States also performed analyses and prepared plans for Group II areas where nonattainment problems were identified. Work continued on establishing the PM-10 ambient monitoring network. States continued to operate sulfur dioxide monitoring networks and inspect major sulfur dioxide sources. State and local agencies continued to implement various elements of their multi-year development

plans for building and implementing programs for assessing and reducing exposure to air toxics. State/local agencies worked to identify and integrate air toxics considerations into current regulatory programs for both ozone and PM-10.

States continued to carry out source inspection and monitoring programs to assure both initial and continuous compliance by major stationary sources. States continued to identify contractors that violated the asbestos demolition and renovation regulations and took appropriate follow-up actions. States also continued to operate and monitor the quality of air monitoring networks and to assume responsibility for implementing NSPS and NESHAPS regulations.

Resources to support specialized training for state/local personnel involved in abatement and control activities were continued in 1990. Support for three special projects was provided in 1990. These projects are: Northeast interstate nonattainment and visibility problems, the South Coast Air Quality Management District's alternative fuels options demonstration project, and the San Joaquin Valley ozone modeling effort.

TRAINING

1992 Program Request

The Agency requests a total of $269,100 supported by 4.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation.

In 1992 the Agency will continue to emphasize its programs of training persons involved in air pollution control at the state and local level in order to effectively implement the Clean Air Act Amendments of 1990. The program will manage $2.3 million provided in the Control Agency Resource Supplementation program to develop, revise, and deliver short courses addressing Clean Air Act requirements using a number of university area training centers. Self-instructional training, videos, and workshops will also be provided.

1991 Program

The Agency is allocating 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.

In 1991 the Agency is managing its program of training persons involved in air pollution control at the state and local level. The program is developing, updating, and revising short courses to address the new Clean Air Act Amendments. In addition, self-instructional training is being provided to persons involved in abatement and air pollution control at the state and local level. Technical support is being provided to states and Regions which provide funding for planning specialty workshops and training courses.

1990 Accomplishments

In 1990 the Agency obligated a total of $270,300 supported by 4.0 total workyears to this program, all of which is from the Salaries and Expenses appropriation.

In 1990 the Agency managed the development, revision, and delivery of short courses and self-instructional materials with major emphasis on the development of training courses in the areas of PM-10, ozone and carbon monoxide, and permitting. The Agency also provided technical support to states and Regions planning workshops and training courses. In addition, existing courses were updated as a result of regulatory change.

## AIR
## Air Quality Management Implementation

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Air Quality Management Implementation | | | | | |
| Salaries & Expenses | $13,317.0 | $15,252.2 | $15,252.0 | $19,518.3 | $4,266.3 |
| Abatement Control and Compliance | $2,303.3 | $3,672.9 | $3,672.9 | $322.9 | -$3,350.0 |
| TOTAL | $15,620.3 | $18,925.1 | $18,924.9 | $19,841.2 | $916.3 |
| TOTAL: | | | | | |
| Salaries & Expenses | $13,317.0 | $15,252.2 | $15,252.0 | $19,518.3 | $4,266.3 |
| Abatement Control and Compliance | $2,303.3 | $3,672.9 | $3,672.9 | $322.9 | -$3,350.0 |
| Air Quality Management Implementation TOTAL | $15,620.3 | $18,925.1 | $18,924.9 | $19,841.2 | $916.3 |
| **PERMANENT WORKYEARS** | | | | | |
| Air Quality Management Implementation | 256.3 | 300.7 | 300.7 | 368.2 | 67.5 |
| TOTAL PERMANENT WORKYEARS | 256.3 | 300.7 | 300.7 | 368.2 | 67.5 |
| **TOTAL WORKYEARS** | | | | | |
| Air Quality Management Implementation | 270.4 | 314.8 | 314.8 | 368.2 | 53.4 |
| TOTAL WORKYEARS | 270.4 | 314.8 | 314.8 | 368.2 | 53.4 |

## Air Quality Management Implementation

Budget Request

The Agency requests a total of $19,841,200 supported by 368.2 total workyears for 1992, an increase of $916,300 and 53.4 total workyears from 1991. Of the request, $19,518,300 will be for the Salaries and Expenses appropriation and $322,900 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of $4,266,300 and a decrease in the Abatement, Control and Compliance appropriation of $3,350,000.

AIR QUALITY MANAGEMENT IMPLEMENTATION

1992 Program Request

The Agency requests a total of $19,841,200 supported by 368.2 total workyears for this program, of which $19,518,300 will be for the Salaries and Expenses Appropriation and $322,900 will be for the Abatement, Control and Compliance Appropriation. This represents an increase of $4,266,300 for the Salaries and Expenses appropriation and a decrease in the Abatement, Control and Compliance Appropriation of $3,350,000. The increase of 53.4 total workyears will support implementation of new or expanded provisions of the Clean Air Act of 1990, particularly requirements for attainment of NAAQSs, reduction of air toxics, and establishment of permit and fee programs. The decrease in the Abatement, Control and Compliance appropriation represents completion of selected special projects.

In 1992 the Regional air quality management program will give priority to development of state implementation plans to attain ozone and carbon monoxide NAAQSs. New requirements in the revised Clean Air Act include: developing attainment demonstrations based upon application of photochemical dispersion models for multi-state ozone nonattainment areas, updating base year emission inventories to 1990, and expanding inventories to include additional sources based on an area's nonattainment classification (i.e., moderate, serious, severe, or extreme). During 1992 the Regions will perform detailed reviews of year-of-enactment inventories and initiate new programs to quality assure critical inventory components.

Regional offices will provide assistance and guidance to states in developing processes and methods to allow for regular updating (every three years) of emissions inventories for ozone precursors (volatile organic compounds and nitrogen oxides), carbon monoxide, and PM-10. Regional offices will also develop quality assurance programs for PM-10 emissions inventories. In addition, Regional offices will develop and implement tracking systems in order to determine actual emissions reductions and to verify that states are meeting reasonable further progress requirements.

Requirements for PM-10 will apply to a number of new areas where states will require guidance and technical assistance in developing their control strategies, inventories, and plan revisions to meet the requirements of the new Clean Air Act. Regional offices will provide assistance to states and local agencies in developing regulations to implement RACMs for PM-10 sources.

Regional sulfur dioxide program efforts will focus on correcting deficiencies in state implementation plans for sulfur dioxide. States must correct the plans in order to provide a compliance base for sources applying for permits under the new operating permit programs that will become operational during the next few years. States must establish operating permit program requirements for all major stationary sources. Regional offices will provide assistance and guidance to states as they develop and implement operating permit programs.

The operating permit program applies to sources of air toxics as well as to sources of the criteria pollutants. The new Clean Air Act allows toxics sources to seek early reductions in emissions. Regional offices will review requests from toxics sources and assess alternate compliance programs for these sources. Regional offices with states bordering the Great Lakes will provide support to an air toxic deposition study for the Great Lakes basin.

1991 Program

In 1991 the Agency is allocating a total of $18,924,900 supported by 314.8 total workyears to this program, of which $15,252,000 is from the Salaries and Expenses appropriation and $3,672,900 is from the Abatement, Control and Compliance appropriation.

In 1991 the Regional air quality management program will give highest priority to implementation of the Clean Air Act Amendments of 1990. Regions will provide detailed technical guidance and assistance to states as they begin the process of designating areas as nonattainment for ozone, carbon monoxide, PM-10, sulfur dioxide and lead. The designation process will require Regional offices to review state-submitted air quality data and prepare Federal Register actions classifying the various areas for which the states submit air quality data. In addition, Regions will provide assistance in compiling draft year-of-enactment emissions inventories for volatile organic compounds and carbon monoxide and in developing control strategies for meeting the attainment requirements of the new Act. State efforts to correct and improve existing RACT regulations for volatile organic compounds will extend into 1991. Regions will evaluate the adequacy of state legislative authority for adopting and implementing the operating permit and fee requirements of the new Act and will provide guidance and direction to states in developing operating permit programs.

Regional offices will implement other air quality management programs that include: (1) providing guidance to states in correcting their implementation plans for lead; (2) assisting state and local agencies in reviewing early emission reduction plans submitted by toxics sources; and (3) performing other functions such as managing the air grants process, selectively implementing the National Air Audit System, and assisting states in the implementation of the programs for new source review and prevention of significant deterioration. In

1991 states will be implementing nitrogen oxides increments for the prevention of significant deterioration program.

Congressional Directives. A total of $3,350,000 is for two Congressionally directed projects, ozone modeling for the lower Lake Michigan area and an air pollution study for the Baton Rouge/New Orleans corridor.

1990 Accomplishments

In 1990 the Agency obligated a total of $15,620,300 supported by 270.4 total workyears, of which $13,317,000 was from the Salaries and Expenses appropriation and $2,303,300 was from the Abatement, Control and Compliance appropriation.

In 1990 one of the major priorities of the Regional air quality management program was implementation of the Agency's post-1987 policy for correcting and upgrading state plans for ozone and carbon monoxide nonattainment areas. The Regional offices worked with state and local agencies to correct and improve existing regulations and control measures and enhance overall program effectiveness. EPA and states also spent considerable effort on the application of a regional ozone model in the Northeast, completing monitoring activities and data base development.

The Regional offices reviewed, processed, and took rulemaking actions on state submitted revisions for PM-10 and sulfur dioxide implementation plans. The state implementation plan reform process, begun by the Regional offices in 1989, continued to reduce the "backlog" of plan revisions in 1990. The Regions provided assistance to state and local agencies in implementing their multi-year development plans for continuing air toxics programs. The Regions also continued to manage the air programs grant process and assist states in the implementation of the prevention of significant deterioration and new source review programs. The Regional offices also expended substantial effort on development of court-mandated Federal implementation plans for several ozone and carbon monoxide nonattainment areas. EPA proposed federal implementation plans for the Chicago and Los Angeles areas in 1990.

In 1990 support was provided for four special projects: ozone modeling for the lower Lake Michigan area, an air pollution study for the Baton Rouge/New Orleans corridor, ozone modeling for the Sacramento area, and the El Paso/Juarez air quality study.

AIR
Trends Monitoring & Progress Assessment

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| PROGRAM | | | | | |
| Ambient Air Quality Monitoring | | | | | |
| Salaries & Expenses | $3,859.6 | $4,071.4 | $4,071.2 | $4,786.8 | $715.6 |
| Abatement Control and Compliance | $98.8 | $122.8 | $122.8 | $122.8 | |
| TOTAL | $3,958.4 | $4,194.2 | $4,194.0 | $4,909.6 | $715.6 |
| Air Quality & Emissions Data Management & Analysis | | | | | |
| Salaries & Expenses | $5,123.9 | $5,994.8 | $5,994.8 | $7,690.1 | $1,695.3 |
| Abatement Control and Compliance | $6,076.1 | $12,769.4 | $12,769.4 | $23,969.4 | $11,200.0 |
| TOTAL | $11,200.0 | $18,764.2 | $18,764.2 | $31,659.5 | $12,895.3 |
| TOTAL: | | | | | |
| Salaries & Expenses | $8,983.5 | $10,066.2 | $10,066.0 | $12,476.9 | $2,410.9 |
| Abatement Control and Compliance | $6,174.9 | $12,892.2 | $12,892.2 | $24,092.2 | $11,200.0 |
| Trends Monitoring TOTAL | $15,158.4 | $22,958.4 | $22,958.2 | $36,569.1 | $13,610.9 |
| Progress Assessment | | | | | |
| PERMANENT WORKYEARS | | | | | |
| Ambient Air Quality Monitoring | 74.3 | 81.5 | 81.5 | 90.3 | 8.8 |
| Air Quality & Emissions Data Management & Analysis | 79.7 | 92.0 | 92.0 | 114.3 | 22.3 |
| TOTAL PERMANENT WORKYEARS | 154.0 | 173.5 | 173.5 | 204.6 | 31.1 |
| TOTAL WORKYEARS | | | | | |
| Ambient Air Quality Monitoring | 80.1 | 86.1 | 86.1 | 90.3 | 4.2 |
| Air Quality & Emissions Data Management & Analysis | 81.9 | 92.0 | 92.0 | 114.3 | 22.3 |
| TOTAL WORKYEARS | 162.0 | 178.1 | 178.1 | 204.6 | 26.5 |

## Trends Monitoring and Progress Assessment

### Budget Request

The Agency requests a total of $36,569,100 supported by 204.6 total workyears for 1992, an increase of $13,610,900 and 26.5 total workyears from 1991. Of the request, $12,476,900 will be for the Salaries and Expenses appropriation and $24,092,200 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of $2,410,900 and an increase of $11,200,000 in the Abatement, Control and Compliance appropriation.

### AMBIENT AIR QUALITY MONITORING

### 1992 Program Request

The Agency requests a total of $4,909,600 supported by 90.3 total workyears for this program, of which $4,786,800 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 $715,600 for the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance Appropriation. The increase of 4.2 total workyears will support expanded efforts to plan and oversee enhanced monitoring networks for carbon monoxide, ozone, and ozone precursors and to assist in a multi-year study to develop improved emission factors and dispersion models for estimating the impact of surface coal mines.

In 1992 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 and the State and Local Air Monitoring System data base. Data analyses including air quality trend information will be developed 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. PM-10 monitors established or moved during 1991 will require review and site visits to verify compliance with EPA air monitoring regulations. Reviews of PM-10 ambient data and sampling frequency will be performed and will include data critical to classification determinations and identification of possible control strategies. Field support will be provided to a multi-year initiative to improve the factors and models used in estimating the impact on PM-10 air quality from emissions at surface coal mines. The Regions will continue to provide quality assurance support to Indian Tribes and to assist in developing ambient monitoring programs.

Technical oversight and support will be provided to state and local programs in refining and validating data bases needed to prepare state

implementation plans for 96 ozone areas and 41 carbon monoxide areas. Support to the upgrading of the ambient networks for these areas will be expanded with special emphasis on planning and implementing enhancements to ozone and precursor networks in areas classified as "serious," "severe" and "extreme."

Support to the Agency's toxic monitoring program will continue with support to state and local ambient monitoring programs on methods, siting and quality assurance, support to the Toxics Air Monitoring System sites maintained by the Office of Research and Development and support to control agencies in evaluating the impact of specific toxic emission sources and refining toxic emission data bases. Support will also be provided to new Agency efforts to establish ambient toxics sampling in the vicinity of the Great Lakes and other major boundary waters.

1991 Program

In 1991 the Agency is allocating a total of $4,194,000 supported by 86.1 total workyears for this program, of which $4,071,200 will be for the Salaries and Expenses appropriation and $122,800 will be for the Abatement, Control and Compliance appropriation.

In 1991 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 and the State and Local Air Monitoring System data base. Data analyses including air quality trend information will be developed 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. PM-10 monitors established or moved during 1990 will require review and site visits to verify compliance with EPA air monitoring regulations. Reviews of PM-10 ambient data and sampling frequency will be performed and will include data critical to classification determinations and identification of possible control strategies.

Regional Office implementation of the Toxics Air Monitoring System 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 and 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 data bases needed to prepare state implementation plans. This will include data bases for 96 ozone areas and 41 carbon monoxide areas as well as additional areas identified through 1989 or 1990 exceedances. This effort will include coordination of the periodic nonmethane organic

compounds/nitrogen oxides sampling programs. Oversight of revisions to the carbon monoxide and ozone ambient networks will continue with emphasis on evaluating networks for newly identified nonattainment areas and implementing corrective actions. The Regions will continue to provide quality assurance support to Indian Tribes and to assist in developing ambient monitoring programs.

1990 Accomplishments

In 1990 the Agency obligated a total of $3,958,400 supported by 80.1 total workyears, of which $3,859,600 was from the Salaries and Expenses appropriation and $98,800 was from the Abatement, Control and Compliance appropriation.

In 1990 the Regional offices coordinated the collection, validation, and submission of ambient data with emphasis on areas developing revised state implementation plans for ozone and carbon monoxide. Ambient network support focused on eliminating air monitoring sites having marginal utility and in identifying changes needed to adequately monitor current or projected areas of ozone and carbon monoxide nonattainment. In addition, the Regions assisted states in implementing network plans for ambient monitoring of PM-10, completing quality assurance plans necessary to meet EPA requirements and in developing multi-year plans for replacement of ambient monitors and related equipment. On-site audits of 320 monitors were conducted including 50 newly established PM-10 sites. The Regions also assisted 36 state and local agencies in assessing potential risks from toxic pollutants through ambient sampling and 30 agencies in developing emission inventories. The Regions also provided quality assurance support to Indian Tribes and assistance in developing ambient monitoring programs.

AIR QUALITY AND EMISSIONS DATA MANAGEMENT AND ANALYSIS

1992 Program Request

The Agency requests a total of $31,659,500 supported by 114.3 total workyears for this program, of which $7,690,100 will be for the Salaries and Expenses appropriation and $23,969,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $1,695,300 for the Salaries and Expenses appropriation, an increase of $11,200,000 for the Abatement, Control and Compliance appropriation, and an increase of 22.3 workyears from 1991. The increases reflect resources needed to implement new requirements of the Clean Air Act Amendments of 1990 for air toxics, NAAQSs attainment, and operating permits.

Both of the Aerometric Information Retrieval System (AIRS) subsystems will be maintained and guidance will be provided to users. A total of three to five additional states will be provided with access to the Facility Subsystem. New software to support high priority reports and analyses will be implemented for both subsystems. Additional AIRS software to track, summarize, and display air quality and emission data relating to ozone and carbon monoxide regulatory programs will be developed.

Support of headquarters, Regional office, and state and local modeling of both NAAQSs and toxics pollutants will be continued as will on-going efforts to evaluate model accuracy and provide refined models and guidance. Implementation of the Agency's toxic monitoring strategy will continue and include planning and

coordination of efforts to establish toxic sampling in the vicinity of the Great Lakes and other major boundary waters. Support to the development of MACT standards and standards for municipal waste combustors will be increased through an expanded test program and accelerated development of test methods. Technical support to state and local test programs will be continued. The program will continue to test emissions of selected toxic sources and to publish emission factors and related guidance to support state toxics programs. The program will also continue to prepare analyses of ambient and emission trends, issue status and trends reports and provide national oversight of state implementation plan ambient monitoring.

Technical support to the ozone/carbon monoxide program will be continued with expanded support provided in seven critical areas: (1) Development of a new system for storing, retrieving, and analyzing emissions inventory data on smaller (area) sources and for mobile sources. This will complement related EPA capabilities for handling inventory data from large (point) sources and will be a major module of AIRS; (2) Technical support to state and local programs to enhance carbon monoxide, ozone, and precursor monitoring networks; (3) Technical support to the application of urban grid models in about 30 ozone areas; (4) National oversight and quality assurance of state implementation plan emission inventories in 96 ozone areas and 41 carbon monoxide areas; (5) Initiation of a program to develop volatile organic compound, nitrogen oxides, and carbon monoxide emission factors; (6) Development of guidance for tracking future reductions to baseline emissions; and (7) Technical support to application of EPA's Regional Oxidant Model in the Southeast and Midwest.

The program will continue to provide technical guidance to Regional offices and to state and local agencies in applying PM-10 dispersion and receptor models, applying PM-10 emission factors and inventory guidance, evaluating monitoring networks and ambient data, conducting special studies, and applying methods for testing sources of particulates. Efforts to develop emission factors for additional PM-10 source categories will be expanded. A multi-year study will be initiated to improve the emission factors and dispersion models used to assess the air quality impact of emissions from surface coal mines. Studies will be completed of the impact of the Mohave Power Plant on visibility in and near Grand Canyon National Park.

The request will allow accelerated development of data management systems needed to store and retrieve data on permits and support national management of the permit program.

1991 Program

In 1991 the Agency is allocating a total of $18,764,200 supported by 92.0 total workyears for this program, of which $5,994,800 will be for the Salaries and Expenses appropriation and $12,769,400 will be for the Abatement, Control and Compliance appropriation.

In 1991 active support is provided for implementation of the new Clean Air Act Amendments of 1990. Emphasis will be placed on developing required rules and guidance on modeling and monitoring, on participation in several required studies, and on generally providing expanded technical support to the ozone/carbon monoxide program and to the toxics program. For the ozone/carbon monoxide program, implementation support will focus on four areas: (1)

Development of a new system for storing, retrieving, and analyzing emissions inventory data on smaller (area) sources and on mobile sources - this will complement related EPA capabilities for handling inventory data from large (point) sources and will be a major module of AIRS. (2) Development of ambient monitoring guidance and proposed rules to facilitate the correction of deficiencies in current networks, the establishment of long-term networks for sampling ozone precursors, and the implementation of enhanced networks in newly identified areas. (3) Development of technical guidance for the future application of urban grid models; provision of technical and operational support to state and local modeling efforts for both carbon monoxide and ozone areas; and initiation of work on long-term application of Regional Oxidant Models in three regions. (4) Initiation of programs for managing, tracking, and quality assuring emission inventory data including data quality reviews of state implementation inventories for national consistency. Also, efforts will be initiated to develop prescriptive requirements for preparing point and area source inventories.

Efforts to develop improved methodologies for compiling inventories will be continued as will efforts to develop and issue PM-10 emission factors for significant sources of particulates. Support of headquarters, Regional office and state and local modeling of both NAAQSs and toxic pollutants will be continued as will on-going efforts to evaluate model accuracy and provide refined models and guidance. Implementation of the Agency's toxic monitoring strategy will continue. Emission testing support will continue and include 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 state implementation ambient monitoring. Analyses will be initiated to study the impact of emissions from the Mohave Power Plant on visibility in and near Grand Canyon National Park.

Expanded air toxics support will be provided in four areas: (1) development of emission test methods for MACT standards to be issued within two and four years of enactment; (2) provision of technical support to states on test method application; (3) development of emission factors to support state implementation of toxics programs; and (4) conduct of dispersion analyses for proposed MACT standards and to assist in developing guidance for screening analyses.

Both of the AIRS subsystems will be maintained and guidance provided to users. A total of 12 to 15 additional states will be provided access to the Facility Subsystem and new software to support high priority reports and analyses will be implemented for both subsystems. Additional AIRS software to track, summarize, and display air quality and emission data relating to ozone and carbon monoxide regulatory programs will be developed.

Congressional Directives. A total of $2,500,000 is for a Congressionally directed project, the pollutant tracer study at the Mohave Power Plant.

1990 Accomplishments

In 1990 the Agency obligated a total of $11,200,000 supported by 81.9 total workyears, of which $5,123,900 was from the Salaries and Expenses appropriation and $6,076,100 was from the Abatement, Control and Compliance appropriation.

In 1990 comprehensive user support and enhanced software was provided to 50 agencies using the AIRS Air Quality Subsystem. Large emission and compliance data bases were converted and refined and the baseline software and files for the AIRS Facility Subsystem (AFS) were placed in operation. AFS user training was provided to staff from all Regional offices, 39 states, 1 territory and 19 local agencies. User support was provided to over 35 agencies which opted to access AFS directly. To support future inventory efforts, design work on a system for storing and retrieving area source data was modified to include mobile source data. Support was provided to future ozone and carbon monoxide state implementation plan revisions with emphasis on guidance for preparing emission inventories, assistance in preparing data bases and applying grid and statistical models, and completion of the multi-year project to assess the regional transport of ozone and precursors in the Northeast. Other major activities included: publication of the Air Quality and Emissions Trend Report for 1988; development of new PM-10 emission factors for five source categories; technical support to the Regional offices and states on application of factors for PM-10 and other pollutants; completion of a study to apply urban grid models for ozone to five cities; and emission test support to headquarters offices developing emission standards and to state and local agencies in applying test methods.

AIR
Atmospheric And Indoor Air Programs

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| PROGRAM | | | | | |
| Acid Rain Program | | | | | |
| Salaries & Expenses | | $2,211.8 | $2,211.7 | $4,390.3 | $2,178.6 |
| Abatement Control and Compliance | | $2,881.8 | $2,881.8 | $6,481.8 | $3,600.0 |
| TOTAL | | $5,093.6 | $5,093.5 | $10,872.1 | $5,778.6 |
| Indoor Air Program | | | | | |
| Salaries & Expenses | | $834.4 | $834.3 | $1,452.7 | $618.4 |
| Abatement Control and Compliance | | $2,305.6 | $2,305.6 | $5,505.6 | $3,200.0 |
| TOTAL | | $3,140.0 | $3,139.9 | $6,958.3 | $3,818.4 |
| Global Change Program | | | | | |
| Salaries & Expenses | | $1,529.7 | $1,529.7 | $2,065.5 | $535.8 |
| Abatement Control and Compliance | | $15,707.4 | $15,707.4 | $27,207.4 | $11,500.0 |
| TOTAL | | $17,237.1 | $17,237.1 | $29,272.9 | $12,035.8 |
| TOTAL: | | | | | |
| Salaries & Expenses | | $4,575.9 | $4,575.7 | $7,908.5 | $3,332.8 |
| Abatement Control and Compliance | | $20,894.8 | $20,894.8 | $39,194.8 | $18,300.0 |
| Atmospheric & Indoor Air Programs TOTAL | | $25,470.7 | $25,470.5 | $47,103.3 | $21,632.8 |
| PERMANENT WORKYEARS | | | | | |
| Acid Rain Program | | 32.8 | 32.8 | 67.8 | 35.0 |
| Indoor Air Program | | 13.5 | 13.5 | 23.5 | 10.0 |
| TOTAL WORKYEARS | | | | | |
| Global Change Program | | 24.7 | 24.7 | 30.7 | 6.0 |
| TOTAL PERMANENT WORKYEARS | | 71.0 | 71.0 | 122.0 | 51.0 |
| Acid Rain Program | | 32.8 | 32.8 | 67.8 | 35.0 |
| Indoor Air Program | | 13.5 | 13.5 | 23.5 | 10.0 |
| Global Change Program | | 24.7 | 24.7 | 30.7 | 6.0 |
| TOTAL WORKYEARS | | 71.0 | 71.0 | 122.0 | 51.0 |

## Atmospheric and Indoor Air Programs

Budget Request

The Agency requests a total of $47,103,300 supported by 122.0 total workyears for 1992, an increase of $21,632,800 and an increase of 51.0 total workyears from 1991. Of the request, $7,908,500 will be for the Salaries and Expenses appropriation and $39,194,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $3,332,800 in the Salaries and Expenses appropriation and an increase of $18,300,000 in the Abatement, Control and Compliance appropriation.

ACID RAIN PROGRAM

1992 Program Request

In 1992 the Agency requests a total of $10,872,100 supported by 67.8 total workyears, of which $4,390,300 will be for the Salaries and Expenses appropriation and $6,481,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $2,178,600 in the Salaries and Expenses appropriation; an increase of $3,600,000 in the Abatement, Control and Compliance appropriation; and an increase of 35.0 total workyears.

The increase supports implementation of the acid rain control requirements of the Clean Air Act Amendments of 1990.

In 1992 the acid rain program will promulgate the allowance system regulations and initiate systems operation. States and EPA Regional offices will review and quality assure additional utility data for allowance calculations. Phase I allowance reserve calculations and Phase II allowances for over two dozen source categories will be published. Final guidance will be issued on allowance trading, sales, and auctions. The program will promulgate a Federal permit program regulation and regulations on emissions monitoring requirements. An emissions tracking system will be developed.

In addition, the program will issue guidance on qualifying Phase I technology. Phase I permit applications and compliance plans, including requests for extensions, will be reviewed and approved. The program will work with the Office of Air Quality Planning and Standards on a regulation or interpretive ruling for air quality review of clean coal technology/repowering projects. The program will promulgate nitrogen oxide emission rate regulations, including provisions for alternative compliance methods and emissions averaging. Activities will also include review/approval of nitrogen oxide permit applications and compliance plans. In addition, the program will promulgate a regulation on permit requirements for sources electing to enter the allowance trading program, establish an energy conservation and renewable energy technology reserve, and review applications submitted for the reserve. The program will also issue critical guidance on the Federal and state permit programs, alternative nitrogen oxide emissions rates and averaging, and application procedures for clean coal technology projects and elective sources. In addition, the program will promulgate a regulation to collect fees from plants exceeding

their sulfur dioxide sulfur dioxide allowances and to reduce automatically the plants' subsequent year allocation by the excess emission amount.

The program will co-chair the Acid Deposition Subcommittee of the Air and Radiation Research Committee and will continue to participate in on-going NAPAP activities and will coordinate Agency acid rain related research. Workshops on the acid rain program will be conducted and information will be disseminated to industry and the public. The program will also begin two reports to Congress during 1992, one on the feasibility of acid deposition standards and a second on assessment of Canadian acid rain controls.

The program will begin preparation of a report to Congress on industrial sulfur dioxide emissions with updates required every five years. A continuous emissions monitoring training program will be developed and implemented. Also, a plan to assess the economic and environmental consequences of the program will be designed.

1991 Program

In 1991 the Agency is allocating a total of $5,093,500 supported by 32.8 total workyears to this program, of which $2,211,700 is for the Salaries and Expenses appropriation and $2,881,800 is for the Abatement, Control and Compliance appropriation.

In 1991 the new Clean Air Act Amendments of 1990 require significantly expanded and enhanced acid rain program development, coordination, and implementation activities. The program proposes all the major regulations for the acid rain program: the allowance system (trading, banking, auctions, and sales); continuous emissions monitoring (CEM) and tracking; a Federal acid rain permit program; nitrogen oxide emission rates for existing boilers with provisions for averaging and alternatives; excess emissions fees and offsets; and conservation and renewable energy incentives.

Under the Federal Advisory Committee Act, an Acid Rain Advisory Committee has been established to assist EPA in developing the most effective rules and procedures for this new approach to environmental management. This 44-member body, composed of utility executives, public utility commissioners, state air directors, environmentalists, gas representatives, and others, is essential, particularly given the added requirements and complexity of the final law. Workshops on the acid rain control program will be conducted and information will be disseminated to industry, states, and the public in 1991.

Also, support will be provided for participation on the United States - Canadian Air Quality Committee in implementing the air quality accord. The program will begin an initiative to use existing Federal, state, Regional and organizational networks to identify informational needs and state-level projects for encouraging increased use of energy conservation and renewables through least-cost utility planning and voluntary private actions. The acid rain program will also ensure completion of the 1990 NAPAP integrated assessment and carry out the new requirements under the legislation for continuation of NAPAP. Support will continue to be provided to DOE through the Innovative Control Technology Advisory Panel and comments will be provided on future DOE clean coal technology solicitations.

1990 Accomplishments

1990 accomplishments for this program activity are described in the program element, "National Pollutant Policies, Strategies and Rules".

INDOOR AIR PROGRAM

1992 Program Request

In 1992 the Agency requests a total of $6,958,300 supported by 23.5 total workyears, of which $1,452,700 will be for the Salaries and Expenses appropriation and $5,505,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $618,400 in the Salaries and Expenses appropriation; an increase of $3,200,000 in the Abatement, Control and Compliance appropriation; and an increase of 10.0 total workyears.

The increases provide for a national study of indoor air quality in large buildings; the expansion of the Regional Training Center network, implementation of the Agency's indoor air program at the Regional level including the development of specialized indoor air quality courses; and the development of an indoor air source emissions inventory for materials used in the indoor environment.

In 1992 the indoor air program will launch the National Indoor Air Quality Clearinghouse to provide a range of information services to the public, to state and local indoor air personnel, to the private sector, and to the research community. Two additional guidance documents for key indoor air quality audiences will be completed, an introductory design guide for architects of commercial buildings, and a physicians guide to building-related illnesses. With the completion of these remaining guidance documents, the indoor air program will have concluded the first round of indoor air quality program development by establishing Federal guidance on the crucial elements of a national indoor air quality strategy. The availability of guidance for consumers, homebuilders, owners and operators of large buildings, school district administrators, architects and engineers, and physicians will provide the knowledge base from which a variety of more specific, targeted information products will be created and aggressively disseminated. In 1992 additional activities will include: the development an indoor air quality investigation handbook, a home buyers guide to indoor air quality, and building maintenance forms and check-lists for building operators. The Regional training centers selected to develop and offer indoor air quality training courses in 1991 will be maintained. The program will cooperate with the Department of Health and Human Services in evaluating the effectiveness of specific workplace smoking policies.

The program will initiate a national study of the indoor air quality in large buildings. This investigation of selected complaint and non-complaint buildings will provide the data needed to define the extent to which our estimates accurately reflect the national building stock, and whether differences in specific parameters of indoor air quality account for differences in occupant health and comfort concerns. Resources will fund these investigators to collect and report data in a comparable manner, as determined by indoor air quality protocols for the study developed in 1991.

Expansion of the Regional Training Center network through the development of targeted courses for specific indoor air quality audiences will create a strong foundation for an effective partnership with state and local authorities. At the same time initiation of an indoor air source emissions inventory will provide an important tool for consumers and key decision-makers to select lower emitting materials in the indoor environment. This will be a crucial element in an effective national response to indoor air quality concerns.

1991 Program

In 1991 the Agency is allocating a total of $3,139,900 supported by 13.5 total workyears to this program, of which $834,300 is for the Salaries and Expenses appropriation and $2,305,600 is for the Abatement, Control and Compliance appropriation.

In 1991 the indoor air program will continue to provide Agency leadership and coordination within the Federal establishment. Guidance documents for building owners and managers, for homebuilders, and for school district administrators on indoor air quality will be completed and disseminated as will the policymaker's guide to workplace smoking policies. A physicians handbook on building-related illness will be under development. The National Academy of Sciences will recommend to the program a research agenda that should be followed to advance the nation's understanding of the phenomenon of multiple chemical sensitivity. A preliminary report on the economic impact of mitigating indoor air pollution will be completed. A preliminary set of protocols for conducting investigations of both complaint and non-complaint buildings will be made available for discussion by a select group of investigators to prepare for a nationwide study of indoor air quality in large buildings. The next phase of the indoor air quality training strategy for state and local governments will begin with program support for selected Regional training centers to design, develop, and/or offer courses on indoor air quality and related topics. The international inventory of indoor air activities and programs compiled under the aegis of the North Atlantic Treaty Organization Committee on the Challenges of Modern Society will be completed. The National Indoor Air Quality Clearinghouse will begin limited operation.

1990 Accomplishments

1990 accomplishments for this program activity are described in the program element, "National Pollutant Policies, Strategies and Rules."

GLOBAL CHANGE PROGRAM

1992 Program Request

In 1992 the Agency requests a total of $29,272,900 supported by 30.7 total workyears, of which $2,065,500 will be for the Salaries and Expenses appropriation and $27,207,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $535,800 in the Salaries and Expenses appropriation; an increase of $11,500,000 in the Abatement, Control and Compliance appropriation; and an increase of 6.0 total workyears.

The increases provide for technical data, technical support, and regulatory activity initiatives to meet the implementation requirements of the Montreal Protocol. In addition, the increase includes $20,000,000 in financial support through a multi-lateral fund to help developing countries finance the incremental cost of shifting away from ozone depleting chemicals, for the implementation of key provisions of the new Clean Air Act in support of the reduction of ozone depletion chemicals including enhanced program activities and rulemakings for the CFC/halons national recycling program and further development and implementation of safe substitutes and alternative chemicals and products.

In 1992 the global change program will expand the tracking and administrative controls used to operate the regulatory program. To fully implement the amendments to the Montreal Protocol and the new Clean Air Act, the administrative controls and tracking system will require incorporation of additional chemicals, regulated companies, and more frequent electronic reporting by companies. More effective communication with the United States Customs Bureau will be required to monitor possible import violations. In addition, full implementation of the national recycling program is required for the major air-conditioning and refrigeration sectors to minimize the costs of the phase-out required under the amendments to the Protocol and the Clean Air Act.

An effective compliance program will be developed for recycling. The recycling program will also investigate options to recycle or recover these chemicals at disposal and to expand the list of recyclable chemicals to include hydro-fluorocarbons (HCFCs). The program will also be able to strengthen voluntary programs for the recovery and recycling of the ozone depleting compounds in sectors where institutional barriers may hinder such practices. A safe alternatives program, required under the Clean Air Act, will be established to review the environmental and health effects of the developing substitutes. The program will include in its scope a comprehensive evaluation of developing substitutes, and examine all of the environmental benefits and hazards of using (or not using) substitute chemicals. This program will also assess uses (e.g., medical purposes, national security) that should be exempt from any phase-out for a limited period of time. In cooperation with industry, CFC technology efforts for substitutes and vacuum insulation will be enhanced. The global change program will facilitate national and international technology transfer through ad-hoc working groups and trade conferences and through the implementation of the multi-lateral fund under the Protocol. There will be emphasis on assisting small users in shifting out of controlled substances. The program will also participate in scientific and technical assessments that are required under the Montreal Protocol, facilitate the transfer of technologies to developing countries and maintain its lead role in upcoming meetings of the Protocol members.

To address global warming issues, the program will evaluate options to reduce production of greenhouse gases by stabilizing methane from livestock and coal mining and prepare reports as required under the new Clean Air Act amendments. The program will expand efforts to promote cost-effective energy conservation and pollution prevention. The program will examine renewable sources of energy such as an energy efficient lighting program and energy efficient appliances and equipment in the residential and commercial sectors.

The global change program will support international activities for compliance and data reporting for the Montreal Protocol; develop a list of

products that contain regulated chemicals; initiate development of regulations, as required under the Protocol, that ban the import of these products from countries that are non-parties; and continue to conduct further HCFC phase-out activities. The program will also provide financial assistance to developing countries through a multi-lateral fund established by the Parties to the Protocol to help pay for meeting the incremental cost of shifting away from ozone depleting chemicals. The program will also be involved in negotiations involving future changes to the Montreal Protocol.

To implement the Clean Air Act Amendments of 1990, the global change program will collect production, import, and use data on the regulated chemicals and prepare periodic reports to Congress based on this information. The program must respond to petitions that request that EPA expedite the schedule for the phase-out of ozone depleting chemicals, and evaluate exemptions to the schedule for medical purposes, fire suppression, essential uses, and national security. In addition, the program will continue its work on recycling rulemakings that require EPA to set the lowest achievable emissions for CFC using equipment, to ban the sale of small canisters containing CFC refrigerants, and to set safe disposal requirements of refrigerants. The global change program will operate a compliance program to enforce these additional elements of a national recycling program, including the review of certification programs for mobile air-conditioning technicians and equipment. The program will enhance efforts to require adoption of safe substitutes i.e., alternative chemicals and products. The program will also prepare a report to Congress on the projected trends of ozone depletion.

1991 Program

In 1991 the Agency is allocating a total of $17,237,100 supported by 24.7 total workyears to this program, of which $1,529,700 is for the Salaries and Expenses appropriation and $15,707,400 is for the Abatement, Control and Compliance appropriation.

In 1991 implementation and support of the Montreal Protocol will require development of rules on trading with non-participating nations, methods for inspection of imported goods, rules to discourage export of CFC using technologies, enhanced mechanisms to transfer non-CFC using technologies to lesser developed countries, and technical data development and technical support to participating Protocol nations. The program will provide financial support through a multi-lateral fund to help developing countries finance the incremental costs of shifting away from ozone depleting chemicals.

The domestic program under the new Clean Air Act amendments will include administration of allocations, initiation of the development of additional rules, and a program for a national recycling effort. In addition, the new Act will require faster phase-out of CFCs and phase-out of chemicals not previously listed in the Montreal Protocol. This will necessitate the development of regulatory proposals to control methyl chloroform, carbon tetrachloride, and HCFCs. The program will monitor the development of energy efficient and safe substitutes and alternative chemicals and products.

In cooperation with industry, the program will accelerate efforts to develop technologies for fire fighting and refrigeration systems, expand ammonia use, develop better substitutes, and develop better foams. The global change

program will continue to explore and expand its efforts relative to policies, practices and technological options and mechanisms for control of methane emissions to address the greenhouse effect and will extend its efforts to explore energy conservation measures. The program will develop a data base to inform industry and help organize responses that enhance long-term competition, including future foreign market opportunities.

Congressional Directives. A total of $9,500,000 for the Abatement, Control and Compliance appropriation is for three Congressionally directed projects: the Montreal Protocol multi-lateral facilitation fund, methane research, and Montreal Protocol implementation.

1990 Accomplishments

1990 accomplishments for this program activity are described in the program element, "National Pollutant Policies, Strategies and Rules."

# Enforcement

**ENVIRONMENTAL PROTECTION AGENCY**

**1992 Budget Estimate**

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AIR
Stationary Source Enforcement

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Stationary Source Compliance | | | | | |
| Salaries & Expenses | $14,051.6 | $17,720.1 | $17,719.8 | $21,195.7 | $3,475.9 |
| Abatement Control and Compliance | $3,931.4 | $6,525.7 | $6,525.7 | $6,451.7 | -$74.0 |
| TOTAL | $17,983.0 | $24,245.8 | $24,245.5 | $27,647.4 | $3,401.9 |
| TOTAL: | | | | | |
| Salaries & Expenses | $14,051.6 | $17,720.1 | $17,719.8 | $21,195.7 | $3,475.9 |
| Abatement Control and Compliance | $3,931.4 | $6,525.7 | $6,525.7 | $6,451.7 | -$74.0 |
| Stationary Source Enforcement TOTAL | $17,983.0 | $24,245.8 | $24,245.5 | $27,647.4 | $3,401.9 |
| **PERMANENT WORKYEARS** | | | | | |
| Stationary Source Compliance | 281.6 | 344.9 | 344.9 | 382.4 | 37.5 |
| TOTAL PERMANENT WORKYEARS | 281.6 | 344.9 | 344.9 | 382.4 | 37.5 |
| **TOTAL WORKYEARS** | | | | | |
| Stationary Source Compliance | 295.6 | 361.4 | 361.4 | 382.4 | 21.0 |
| TOTAL WORKYEARS | 295.6 | 361.4 | 361.4 | 382.4 | 21.0 |

## Stationary Source Enforcement

Budget Request

**The Agency requests a total of $27,647,400 supported by 382.4 total workyears for 1992, an increase of $3,401,900 and 21.0 total workyears from 1991. Of the request, $21,195,700 will be for the Salaries and Expenses appropriation and $6,451,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase in the Salaries and Expenses appropriation of $3,475,900 and a decrease of $74,000 in the Abatement, Control and Compliance appropriation.**

STATIONARY SOURCE ENFORCEMENT

1992 Program Request

The Agency requests a total of $27,647,400 supported by 382.4 total workyears for this program, of which $21,195,700 will be for Salaries and Expenses appropriation and $6,451,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $3,475,900 for the Salaries and Expenses appropriation, a decrease of $74,000 in the Abatement, Control, and Compliance appropriation, and an increase of 21.0 total workyears from 1991. The increase will address new requirements under the Clean Air Act Amendments of 1990 in the areas of administrative penalties, compliance certification, citizen suits, contractor listing programs, and field inspections.

In 1992 compliance monitoring and enforcement efforts (in concert with the states) will ensure the compliance of state implementation plan, NSPS, and NESHAPs sources. Implementation of the strategies for the Asbestos NESHAPs demolition and renovation program and for benzene will continue, as will initiatives to enforce the other NESHAPs standards. Resources will be used to conduct asbestos demolition and renovation inspections. Efforts will support the implementation of an expanded radionuclide compliance and enforcement program through the inspection of sources and initiation of enforcement actions. A comprehensive program to determine the effectiveness of volatile organic compound rules, implementation of the compliance monitoring and inspection targeting program to ensure better utilization of inspection resources, and workshop and technical support will continue. Efforts to enhance volatile organic compound source compliance in ozone nonattainment areas, including small volatile organic compound sources, will continue. Efforts will also be directed toward implementation of an effective program of reviewing ozone state implementation plans and revisions for enforceability. For the PM-10 program, efforts will focus on reviewing proposed PM-10 state implementation plans for enforceability and ensuring compliance by sources subject to newly promulgated PM-10 SIPs. Enforcement of continuous emission monitoring (CEM) requirements for sulfur dioxide sources will also continue. Sulfur dioxide inspections which may result in the need to issue administrative orders and the processing of litigation referrals will be conducted. In addition, efforts will support the

implementation of the continued phase-down of chlorofluorocarbon (CFC) production and importation. State program building will be emphasized in an expanded review and state implementation plan assistance program for assuring the enforceability of new requirements. Support will be provided for the conduct of inspections and enforcement of the CFC program as will as the expanding air toxics program for radionuclide and an enhanced compliance program for acid rain. A new field citation and penalty program will be implemented under Title VI of the new Clean Air Act amendments. A new program will be implemented to assure that 110 companies install and operate CEM sulfur dioxide monitors for acid rain strategies. Support will also be provided for the development of an operating permits program. Title III toxic emission sources will be evaluated and permitted. Headquarters Regional contract resources will support the conduct of sulfur dioxide inspections, administrative orders, and litigation referrals.

1991 Program

The Agency is allocating a total of $24,245,500 supported by 361.4 total workyears to this program, of which $17,719,800 is from the Salaries and Expenses appropriation and $6,525,700 is from the Abatement, Control and Compliance appropriation.

In 1991 the ten EPA Regional offices are continuing their compliance monitoring and enforcement efforts to ensure (in concert with the states) the compliance of state implementation plan, NSPS, and NESHAPs sources. Implementation of the strategies for the NESHAPs for asbestos demolition and renovation program and for benzene continues, as will initiatives to enforce the other NESHAPs. Resources are being used to conduct asbestos demolition and renovation inspections. Additional support is being provided to an expanding program of assisting states in following through on their enforcement of demolition and renovation activities. Resources are also supporting compliance and enforcement of the benzene NESHAPs. A comprehensive program to determine the effectiveness of rules is being expanded to cover other source and pollutant categories. Implementation of the compliance monitoring and inspection targeting program to ensure better use of inspection resources continues as does workshop and technical support. Resources are being directed toward implementation of an effective program of reviewing ozone state implementation plans and revisions for enforceability.

For the PM-10 program, the Regions are reviewing proposed PM-10 state implementation plans for enforceability and ensuring compliance by sources subject to newly promulgated PM-10 plans. Enforcement of CEM requirements of sulfur dioxide sources continues. Additional resources are supporting the continued phase-down of CFC production and importation and supporting the development and implementation of recycling regulations required by the changes in the Clean Air Act. In addition, state program building is being emphasized in an expanded review and state implementation assistance program for assuring the enforceability of new requirements and the focus of resources for targeting compliance efforts toward significant environmental problems.

In 1991 EPA headquarters continues to participate in the development of policy guidance, planning, and budgeting activities, and the review of selected Regional activities and program performance. Headquarters is also assuring the enforceability of proposed Agency regulations under NSPSs, NESHAPs, and

prevention of significant deterioration programs; responding to formal inquiries; managing the National Asbestos Registry System and the compliance portion of AIRS; managing the level of effort contracts; and conducting technical studies. Headquarters continues the implementation of the technical agenda by developing jointly with the Regions a planned list of technical projects to be initiated in 1991. In addition, this program area will assure the successful implementation of the revised asbestos demolition and renovation strategy.

During 1991 EPA headquarters is ensuring enhanced volatile organic compound compliance by providing technical and training support to the Regions and state agencies, issuing policy guidance, monitoring compliance and enforcement activities, and overviewing the implementation of the rule-effectiveness protocol. In addition, headquarters is continuing the implementation of the laboratory program for woodstove testing, reviewing applications for woodstove certification, monitoring certification tests, and certifying production lines. The woodstove program is moving into the second phase of certification and enforcement and additional resources are supporting implementation of the Random Compliance Audit and the Selective Enforcement Audit programs. Approximately 250 woodstove production lines will be certified during 1991.

Headquarters is reviewing proposed PM-10 and ozone/carbon monoxide state implementation plans for national enforceability issues. It is also evaluating the effectiveness of state and EPA compliance monitoring and inspection programs. Promoting the use and developing national guidance for CEM requirements continues to be a major activity in 1991.

Support for the stratospheric ozone protection program is being expanded through participation in rule development and the preparation of compliance monitoring strategies and guidance for automobile, commercial, and residential air conditioning and refrigeration recycling programs. This is in addition to a doubling of the number of production facilities which must be monitored as a result of revisions to the Clean Air Act and the Montreal Protocol. Review of the phaseout of CFCs and halons through monitoring compliance of manufacturers and importers is being increased with an expected growth in the number of violators identified and enforcement actions taken. The radionuclides and benzene NESHAPs require the development and dissemination of implementation guidance. The program is also supporting development of guidance relative to applicability determinations. In addition, support is being provided to ensure adequate direction and oversight of air toxics compliance and enforcement efforts resulting from new Clean Air Act requirements, particularly in those states where delegations of authority for both existing and prospective standards have not been requested. EPA is ensuring that compliance requirements are reflected in all regulations and guidance developed for the new acid rain program.

In addition, headquarters is developing regulations and guidance for implementation of the administrative enforcement requirements resulting from the new Clean Air Act amendments. Hearing procedures are being developed for use by EPA's new administrative penalty program. Also, EPA is charged with the authority to develop a field citation program for enforcement of the stationary source Clean Air Act requirements. In addition, EPA is developing citizen award provisions, citizen suit guidelines, and contractor listing procedures. Regulations to implement the enhanced monitoring and guidance certification authority in the new legislation are being developed.

1990 Accomplishments

In 1990 the Agency obligated a total of $17,983,000 supported by 295.6 total workyears, of which $14,051,600 was from the Salaries and Expenses appropriation and $3,931,400 was from the Abatement, Control and Compliance appropriation.

In 1990 major activities in the ten Regional offices included the enhancement of volatile organic compound source compliance in ozone nonattainment areas, the implementation of a comprehensive program to determine if adopted measures were effectively implemented and the conduct of compliance workshops to improve inspection quality. Efforts to enable state and local air pollution agencies to improve their technical capabilities continued. Federal enforcement actions focused on violating sources in nonattainment areas, with emphasis on volatile organic compound sources and on enforcing regulations for toxic air pollutant sources. EPA worked closely with the states in this effort through implementation of Agency guidance on "timely and appropriate" enforcement actions. Technical support was provided to the litigation docket and included criminal enforcement activities.

In 1990 EPA Headquarters continued oversight of Regional programs through programmatic reviews and reviews of certain classes of enforcement actions. This program continued to assure the enforceability of proposed EPA regulations, managed the Compliance Data System, including activities related to the development of the new AIRS Facility Subsystem, and the National Asbestos Registry System; managed the level of effort contract support program; developed technical and program guidance; and conducted planning and budgeting activities.

The compliance monitoring and inspection targeting strategy was implemented in 1990. Implementation of the NSPS woodstoves program continued, including the review of applications for woodstoves certification, the monitoring of certification tests, and the evaluation of test results. Headquarters continued oversight and evaluation of Regional and state efforts to implement enhanced volatile organic compound compliance monitoring and inspection activities, the rule-effectiveness assessments, and the small volatile organic compound source strategy. Headquarters developed a comprehensive training program and compliance determination guides for selected categories of volatile organic compound sources. Work to promote use of CEM requirements, including support for Regional and state efforts, also continued as a major activity. The CFC phase-down effort in its first year, placed emphasis on the compliance enforcement program and provided Regional office training. Five enforcement actions were taken and settled in principal prior to the end of the first control period.

AIR
Mobile Source Enforcement

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Mobile Source Enforcement | | | | | |
| Salaries & Expenses | $5,837.2 | $7,798.0 | $7,798.0 | $8,362.9 | $564.9 |
| Abatement Control and Compliance | $2,930.9 | $5,116.1 | $5,116.1 | $5,490.1 | $374.0 |
| TOTAL | $8,768.1 | $12,914.1 | $12,914.1 | $13,853.0 | $938.9 |
| TOTAL: | | | | | |
| Salaries & Expenses | $5,837.2 | $7,798.0 | $7,798.0 | $8,362.9 | $564.9 |
| Abatement Control and Compliance | $2,930.9 | $5,116.1 | $5,116.1 | $5,490.1 | $374.0 |
| Mobile Source Enforcement TOTAL | $8,768.1 | $12,914.1 | $12,914.1 | $13,853.0 | $938.9 |
| **PERMANENT WORKYEARS** | | | | | |
| Mobile Source Enforcement | 105.1 | 120.3 | 120.3 | 124.3 | 4.0 |
| TOTAL PERMANENT WORKYEARS | 105.1 | 120.3 | 120.3 | 124.3 | 4.0 |
| **TOTAL WORKYEARS** | | | | | |
| Mobile Source Enforcement | 107.5 | 120.3 | 120.3 | 124.3 | 4.0 |
| TOTAL WORKYEARS | 107.5 | 120.3 | 120.3 | 124.3 | 4.0 |

## Mobile Source Enforcement

Budget Request

The Agency requests a total of $13,853,000 supported by 124.3 total workyears for this program, of which $8,362,900 will be for the Salaries and Expenses appropriation and $5,490,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $564,900 in the Salaries and Expenses appropriation, an increase of $374,000 in the Abatement, Control and Compliance appropriation, and an increase of 4.0 total workyears.

MOBILE SOURCE ENFORCEMENT

1992 Program Request

The Agency requests a total of $13,853,000 supported by 124.3 total workyears for this program, of which $8,362,900 will be for the Salaries and Expenses appropriation and $5,490,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $564,900 in the Salaries and Expenses appropriation, an increase of $374,000 in the Abatement, Control and Compliance appropriation, and an increase of 4.0 total workyears. The increases reflect the additional resources needed to continue the implementation of the Clean Air Act Amendments of 1990.

The EPA recall program will continue to investigate suspect light-duty vehicle classes and carry out related diagnostic evaluation and remedy development work, and continue to investigate high mileage, light-duty truck classes to ensure and assess compliance with the more stringent full useful life standard. The Agency will increase investigative efforts of heavy-duty gasoline engine classes in support of the heavy-duty recall program implemented in 1991. In addition, the Agency will continue investigations into the operations of importers of non-conforming vehicles to ensure that certification procedures are adequately implemented. The Selective Enforcement Audit (SEA) program will continue audits of light-duty vehicle manufacturer facilities, audits of heavy-duty manufacturer facilities, and 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 fuel inspection program will begin enforcing the more stringent Phase II fuel volatility requirements and also sample for alcohol and other fuel additives by collecting fuel samples from refiners, importers, distributors, and retail outlets throughout the country. The Agency will continue to audit the incidence of tampering and fuel switching to gauge the effectiveness of the anti-tampering programs 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. EPA will implement the oxygenated fuel provisions mandated by the Clean Air Act Amendments of 1990.

1991 Program

The Agency is allocating a total of $12,914,100 supported by 120.3 total workyears for this program, of which $7,798,000 is from the Salaries and Expenses appropriation and $5,116,100 is from the Abatement, Control and Compliance appropriation.

The EPA recall program will investigate 37 suspect light-duty vehicle classes and carry out related diagnostic evaluation and remedy development work. In addition, investigations to assess compliance with the more stringent full useful life standards of high mileage, light-duty truck classes will be conducted. The Agency will implement a small heavy-duty recall program that will begin by investigating two heavy-duty engine classes (gasoline and diesel). In addition, the Agency will continue investigations into the operations of importers of non-conforming vehicles to ensure that certification procedures are adequately implemented. The 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 NCP program to ensure that new production vehicles and engines meet emissions and NCP requirements.

The fuel inspection program will enforce the fuel volatility requirements and also sample for alcohol and other fuel additives by collecting approximately 9,300 fuel samples from refiners, importers, distributors, and retail outlets throughout the country. Lead phase-down enforcement (to ensure that refineries, importers, and distributors are complying with the lead phase-down rules) will decrease and involve only two audits of these fuel facilities. These inspections are expected to lead to approximately 190 Notices of violations. A total of 450 tampering investigations will result in approximately 160 notices of violation. The Agency will audit the incidence of tampering and fuel switching at 15 sites primarily to gauge the effectiveness of the anti-tampering programs 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. Additionally, EPA will promulgate rules allowing the use of marketable oxygen credits from gasolines with higher oxygen content to offset the sale or use of gasoline with a lower oxygen content.

1990 Accomplishments

In 1990 the Agency obligated a total of $8,768,100 supported by 107.5 total workyears for this program, of which $5,837,200 was from the Salaries and Expenses appropriation and $2,930,900 was from the Abatement, Control and Compliance appropriation.

EPA continued the recall program with the investigation of 51 suspect light-duty classes (22 at high altitude), together with related diagnostic evaluation and remedy development work. The Agency also continued the implementation of the regulatory revisions to the imports program. The program processed 10,617 applications for importation of nonconforming vehicles. The SEA program conducted 12 audits of light-duty manufacturer facilities and nine audits of heavy-duty manufacturer facilities to ensure that new production vehicles and engines met emission requirements. The Agency answered 4,714 consumer inquiries on emission warranty issues. The Agency also continued enforcement of the fuel volatility rules involving the inspection and sampling of 9,353 refiners,

importers, distributors, and retail outlets throughout the country. These inspections, along with the anti-tampering and anti-fuel switching enforcement programs resulted in 258 notices of violations. Audits of tampering and fuel switching were carried out at 15 sites. EPA continued to assist with the implementation and assessment of state and local programs aimed at preventing tampering and fuel switching.

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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## WATER QUALITY

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| APPROPRIATION | | | | | |
| Salaries & Expenses | $112,044.5 | $119,615.7 | $119,656.5 | $134,705.1 | $15,048.6 |
| Abatement Control and Compliance | $228,611.2 | $285,889.3 | $285,889.3 | $264,332.3 | -$21,557.0 |
| Research & Development | $10,869.6 | $12,985.2 | $12,985.5 | $13,784.7 | $799.2 |
| TOTAL, Water Quality | $351,525.3 | $418,490.2 | $418,531.3 | $412,822.1 | -$5,709.2 |
| Ocean Dumping Act | $1,365.9 | $1,314.0 | $1,314.0 | | -$1,314.0 |
| PERMANENT WORKYEARS | 2,008.6 | 2,166.4 | 2,166.4 | 2,340.8 | 174.4 |
| TOTAL WORKYEARS | 2,133.1 | 2,250.6 | 2,250.6 | 2,340.8 | 90.2 |
| OUTLAYS | $270,881.4 | $380,802.2 | $380,840.4 | $376,419.9 | -$4,420.5 |
| AUTHORIZATION LEVELS | The Water Quality Act of 1987 reauthorized this program at a level of $410,270.0 for 1990. Authorization for the Clean Water Act as amended in 1987 expired on September 30, 1989. Reauthorization is pending. | | | | |

# WATER QUALITY

## OVERVIEW AND STRATEGY

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

The Water Quality Act (WQA) of 1987, which amended the Clean Water Act, expanded and strengthened the statute through a number of changes designed to enhance water quality and improve the important partnership between EPA and the states. The amended Act ratified existing programs, such as technology-based and water quality-based effluent limits for point source dischargers. It also provided new tools, such as mandatory permits to control sewage sludge contamination and administrative penalties to streamline enforcement actions, to strengthen existing programs.

The WQA established new approaches to address existing water pollution problems (e.g., new programs for control of nonpoint source pollution and permitting of stormwater discharges); provided funds to capitalize state revolving funds; and mandated requirements to address existing and emerging problems, such as surface water toxic control programs. The Great Lakes Critical Programs Act of 1990 amends the CWA to set a specific timetable for completion of Remedial Action Plans (RAPs) and Lakewide Management Plans (LAMPs) in the Great Lakes Basin.

The MPRSA is designed to protect the oceans 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 dredged materials. EPA is authorized to designate disposal sites and is responsible for the management and monitoring of these sites. EPA is authorized to issue permits for all non-dredged materials; however, the Corps of Engineers is responsible for issuing permits for dredged material, using human health and marine impact criteria developed by EPA.

The Ocean Dumping Ban Act (ODBA), which amended the MPRSA, sets a December 1991 deadline to end ocean dumping of sewage sludge and industrial waste. As directed by the Act, EPA has issued dumping permits and negotiated agreements with the dumpers. These agreements include schedules for the ending of ocean dumping and implementation of disposal systems. The legislation imposed two disposal fees on permitted dumpers: an administrative fee to cover the costs of carrying out the Act and a punitive fee to be paid by dumpers who cannot end ocean dumping in 1991.

The MPPRCA implements Annex V of the International Convention for the Prevention of Pollution from Ships (1973). It also requires EPA to submit a report to Congress on methods to reduce plastic pollution; assist the National

Oceanic and Atmospheric Administration (NOAA) in conducting a public education program; and prepare a New York Bight Restoration Plan which includes addressing the problems associated with plastic debris in the New York Bight.

The 1992 water quality program continues our effort to meet legislative requirements and Presidential mandates related to ecological protection, toxic contamination, nonpoint sources of pollution. Furthermore, we will maintain the progress made to date in constructing wastewater treatment facilities and developing the infrastructure to clean and protect our surface waters.

These water quality programs will enable the nation to begin addressing emerging global issues, enhance our ability to protect coastal living resources, and begin cleaning up the areas of concern in the Great Lakes. At the same time, these programs will provide further improvements in enforcement programs, promote state capacity through local cooperative initiatives and provide incentives for developing innovative approaches and technology. EPA will continue to promote international program development through the transfer of water information and technology to Eastern Europe, the wider Caribbean and U.S. Territories to assist in water pollution prevention and remediation efforts in these localities.

## II. PROGRAM HIGHLIGHTS

### Ecology

Wetlands loss has a major impact on our environment, including adverse effects on species populations, water quality and flood control. In 1992, EPA will implement recommendations of the Domestic Policy Council's Wetlands Task Force. This is a high priority for the Agency in its efforts to prevent and control pollution that poses risks to critical aquatic habitats. To assist in attaining no net loss of wetlands, EPA will encourage states and Indian tribes to develop wetlands protection programs, improve scientific knowledge about wetlands protection, work closely with other agencies and apply stronger enforcement actions to deter and punish polluters who illegally destroy these natural resources.

Working closely with the NOAA, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service, EPA will direct significant new resources towards a cooperative interagency approach to improve the Federal response to three major coastal problems: species and habitat alteration and loss, nonpoint source pollution, and contaminated sediments. This initiative builds upon the collective capabilities and authorities of the participating agencies. It will provide a broader range of authorities to effect change, share field expertise and resources, and expand the scope of responsibilities and influence. Existing institutional frameworks and ongoing programs, such as the National Estuary Program (NEP) management conferences and Near Coastal Waters (NCW) strategies, will be used to facilitate proposed actions and to administer project grants.

As a result of new legislative mandates, EPA is greatly increasing resources for development of Remedial Action Plans (RAPs) for the 30 U.S. and five joint U.S./Canada areas of concern in the Great Lakes Basin, as a result of new legislative mandates. The Agency will continue funding for implementation of the Chesapeake Bay Basinwide Toxics Reduction Strategy. This strategy includes research on the fate, transport and effects of toxics on the Bay

ecosystem, as well as pollution prevention initiatives to enhance states' pesticides management programs. In 1992, the Agency will continue support for the Gulf of Mexico program, and the National Estuary Program, which will sustain 17 projects in developing and implementing management plans. Implementation will continue for regional strategies for NCWs which assess pollutant loading and establish pollution control and prevention programs to protect all coastal waters, including the Great Lakes.

To help states establish a strong framework to protect and restore coastal waters, EPA will accelerate efforts to produce both regulatory and non-regulatory tools to address site-specific problems. This will include development of ecologically-based salt and fresh water criteria appropriate for different types of aquatic resources; as well as the development of water quality standards for pollutants of concern.

A plan to regulate currently unregulated industries and pollutants will be published by 199 . EPA will accelerate work to produce technology-based standards for several new industries selected through risk-ranking procedures. Stormwater discharger application rules for large and medium municipalities and industrial activities will be defended and implemented by the Agency.

The Agency will continue to enforce provisions of the Ocean Dumping Ban Act and continue work in support of oil spill restoration programs. EPA will continue involvement with the Corps of Engineers in the designation and management of environmentally safe dredged material disposal sites and work to reduce illegal dumping of dredged material through improved identification procedures and surveillance. The Agency will continue activities to identify and control plastic pollution in marine environments.

Improving State Capacity

Water quality programs will promote state and local cooperative initiatives and provide incentives for developing innovative and alternative technology. Indian tribes will be encouraged to participate as full and equal decision makers in the protection of water resources on their lands through the provision of technical assistance. Through the National Estuary Program, cooperation and environmental management at the Regional, state and local level will be advanced as the Agency and its Federal partners continue to work with state and local agencies to develop and implement management plans for their estuary projects.

Financial assistance will be provided through cooperative agreements to assist states obtain National Pollutant Discharge Elimination System (NPDES) program approvals; perform new complex tasks such as issuing new permits for control of combined sewer overflows, sludge and stormwater; and build capability to support unique pretreatment and enforcement needs. The Agency is also working to establish long-term viable state revolving loan funds. A 1990 appropriation provided financial assistance to Indian Tribes and Alaska Native Villages with wastewater treatment needs.

EPA will assist states in refining their risk management techniques to more accurately reflect the impact of nonpoint source pollution on sensitive aquatic resources and habitats and in moving toward risk-based management of nonpoint source pollution. EPA will also assist the states in implementing their approved nonpoint source management programs by leveraging other Federal agencies'

resources and providing states with grant funds to implement approved elements of state nonpoint source management programs. State and local initiatives will be supported through information clearinghouse and educational programs to identify problems (and potential solutions) that communities face from nonpoint source pollution, as well as wetlands pollution and loss.

Specialized technical assistance will be offered for the pretreatment, compliance and enforcement programs, including hands-on aid to publicly owned treatment works (POTWs) that have difficulty developing local limits for specific categories of indirect industrial dischargers, difficulty meeting their toxicity requirements or have no local pretreatment program. POTWs that discharge to sensitive aquatic resources at greatest risk will also be targeted for this specialized assistance. General assistance efforts will continue to help communities deal with the problems of sewer infiltration/exfiltration, infrastructure and treatment and sludge reuse.

Demonstration projects continue to be extremely useful in leveraging state and local funds, as well as local interest and support for water quality. EPA will fund demonstration projects in the various coastal areas to test solutions and support local management decisions in areas such as nonpoint source pollution controls, low cost technologies, compliance assessment projects and pollution prevention activities. These projects seek to encourage state, local and private investment in the application of these problem solutions in other geographic areas in the future.

Construction Grants and State Revolving Funds

The Agency is working to establish self-sustaining state revolving loan fund programs that can provide financial assistance for construction of new and upgraded wastewater treatment facilities needed by communities to comply with Clean Water Act requirements, and for other purposes (including non-point source programs). Funding for the construction grants program ended in 1990; however, over 4,000 projects will remain in active status in 1992. The Agency is implementing a completion/closeout strategy that will effectively and efficiently phase out the construction grants program while maintaining its technical, environmental and financial integrity. EPA is providing technical and financial assistance to states to carry out their increased base workload, meet new requirements, and attempt to offset the reduction of construction grant set-aside funds that have provided significant financial support to base program activities.

Enforcing Water Quality Controls

In 1992, the water quality enforcement effort will continue to be strengthened by tightening controls on dischargers, improving monitoring efforts and coordinating outreach to inform the public and regulated community of the consequences of improper or illegal disposal of wastes or filling of wetlands. This effort will also include taking stronger enforcement actions through the use of administrative orders, penalties and referrals. Continued compliance will be encouraged by giving priority to resolution of violations at those POTWs which have completed the construction necessary to meet final effluent limits, and by vigorously enforcing pretreatment requirements.

In an effort to support protection of coastal and marine environments, permitting and enforcement activities will be targeted to achieve maximum water quality improvement. In addition, EPA will continue to promote further delegation of our statutorily mandated program for the National Pollutant Discharge Elimination System.

Pollution Prevention

EPA will address the growing global trend towards pollution prevention as an important means of protecting our natural resources. Efforts will include international conferences and special projects related to industrial, municipal and agricultural pollution prevention. The conferences augment continuing efforts to share our industrial technology-based guidelines with other nations through organizations such as the World Bank and the Organization for Economic Cooperation and Development. They also help familiarize us with successful pollution prevention techniques employed by other nations. This will help us further our on-going efforts to incorporate pollution prevention into effluent guidelines development process. EPA will continue support for international activities, generally including the London Dumping Convention, MARPOL, the Cartagena Convention and the Antarctic Treaty. The Agency will also sponsor and participate in workshops and symposia for the international community. Work will continue in conjunction with the wetlands and coastal protection programs of Canada and Mexico to protect these shared water resources, particularly where efforts coincide with bi-national programs involving the Great Lakes and the Gulf of Mexico.

EPA will continue to exhibit domestic environmental leadership in targeting and addressing emerging environmental problems. The Agency will use pollution prevention and control approaches that involve both public and private capacities. In 1992, the Agency will continue to encourage pollution prevention in its municipal pollution control program, through technical assistance to states that will help maintain and improve permit compliance. Likewise, water use efficiency will continue to be promoted in order to reduce pressure for expanding waste treatment capacities and the construction of costly new and environmentally-damaging impoundments.

Performing Research and Development

In 1991, EPA's research program will provide increased focus on wetlands, sediment quality and a renewed emphasis on oil spills research. With losses of over one half of the nation's wetlands and the increased recognition of their ecological and social value emphasized through the "no net loss" goal, research will focus efforts on the science of wetlands creation and restoration. This will include development of scientific guidelines for operational decisions to achieve "no net losses" and to produce and validate design criteria for creation and restoration of the many varying types of wetlands.

Most chemical contaminants and organic wastes in aquatic ecosystems eventually accumulate in the sediments where they adversely affect the water column, accumulate in biological tissues, and enter human food chains. Sediments have become the concern for many state and EPA regulatory activities because of potential impacts, the long periods of time associated with natural assimilation of many in-place pollutants, and the high cost of mitigation action. Current activities requiring sediment quality assessments include ocean disposal, NEPA

reviews, Superfund, and the Great Lakes and Chesapeake Bay estuary projects. Studies will be conducted to compare approaches for developing sediment quality criteria. Comparative toxicological data bases will be used to begin deriving contaminant-specific sediment quality criteria and to recommend minimum test requirements for sediment quality evaluations. Great Lakes Research will also include studies of the impact on the Great Lakes ecosystems of the non-indigenous species, zebra mussel.

Oil spill technologies have not progressed over the past decade to incorporate scientific advances such as microbial degradation. In 1992, research will include bioremediation research at Valdez, Alaska. This research is designed to evaluate the feasibility of accelerating the rate of biological degradation of residues on Prince William Sound's shore lines. A renewed National Oil Spills Program will focus on thermal, chemical and biological approaches to spill prevention and clean-up, while research on the "physical" clean-up activity will be carried out by the U.S. Coast Guard.

Consulting Services

The Agency uses consulting resources to fulfill the requirements of its authorizing legislation. Specifically, EPA uses these resources to provide technical assistance to Regions, states and local governments; collect data and monitor background levels as a basis for future regulatory actions; and conduct studies and analyses which support new programs.

## WATER QUALITY

| PROGRAM ACTIVITIES | Actual 1990 | Current Estimate 1991 | Estimate 1992 | Increase (+) Decrease (-) 1992 vs. 1991 |
|---|---|---|---|---|
| Incremental Outputs | | | | |
| EPA Ocean Dumping Permit Review | 25 | 25 | 25 | -- |
| Ocean Discharge Criteria Eval. | | | | |
| General | 1 | 1 | 1 | -- |
| Major | 23 | 23 | 22 | -1 |
| Minor | 0 | 41 | 6 | -35 |
| Construction Grants Awards[1] | 251 | 117 | 33 | -84 |
| Active Construction Grants Projects[2] | 5,796 | 4,939 | 4,333 | -606 |
| Construction Projects Initiating Operations[3] | 590 | 398 | 325 | -73 |
| Permits Issued by EPA: | | | | |
| Municipal[4] | | | | |
| Major | 210 | 220 | 196 | -24 |
| Sludge Requirements | 324 | 265 | 285 | +20 |
| Minor | 274 | 0 | 0 | -- |
| Non-Municipal[5] | | | | |
| Major | 210 | 300 | 228 | -72 |
| Minor | 462 | 0 | 0 | -- |
| General | 5 | 5 | 5 | -- |
| Adjudicatory Hearings[6] | | | | |
| Settled | 73 | 106 | 116 | +10 |
| Enforcement Actions[7]: | | | | |
| Inspections | 1,863 | 1,900 | 1,460 | -440 |
| Admin. Orders (AOs) | 657 | 476 | 553 | +77 |
| AOs with Penalties | 196 | 378 | 409 | +31 |
| Civil Litigation | 57 | 52 | 71 | +19 |
| Criminal Litigation | 26 | 20 | 28 | +8 |
| Clean Lakes Projects/Studies/ Assessments | 98 | 107 | 90 | -17 |
| Final Water Quality Criteria | 0 | 7 | 7 | -- |

## WATER QUALITY

| PROGRAM ACTIVITIES | Actual 1990 | Current Estimate 1991 | Estimate 1992 | Increase (+) Decrease (-) 1992 vs. 1991 |
|---|---|---|---|---|
| Cumulative Outputs | | | | |
| Operational SRF Programs[8] . . . | 51 | 51 | 51 | -- |
| Effluent Guidelines . . . . . | 51 | 51 | 53 | +2 |
| Regulations/Support Documents for Sludge Reuse/Disposal . . | 0 | 2 | 6 | +4 |
| NPDES State Program Approvals | 39 | 39 | 39 | -- |
| National Estuary Projects . . | 17 | 17 | 17 | -- |

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[1]Quicker conversion to SRF

[2]More recent data

[3]Revised projections

[4] Majors - The actual amount of major municipal permits reissued in 1990 increased slightly from last year (1989) because of the push to do ICSs this fiscal year before the deadline of February 1991. The estimate for 1991 decreased slightly from last year because the Regions have negotiated the new target and this is all they feel that they can do given the complexity of their permits and that they are very resource intensive. Our estimate for 1992 decreased sightly as the permits issuance bulge is going down.

Sludge - The actual amount of permits issued with sludge monitoring requirements increased because it includes the municipal and the non-municipal as we do not split it out for this STARS measure.

Minors - The number of municipal minors decreased due to the push to get ICSs done and the large major municipal backlog.

[5] Majors - The number of major non-municipal permits reissued in 1990 is sightly less than what was issued in 1989 due to the high cost and complexity of these permits. The estimate for 1991 reflects what has been committed to through the Agency's Management System process. The estimate for 1992 reflects the number of permits scheduled to expire in that fiscal year.

Minors - The number of minor non-industrial permits reissued in FY1990 reflect the increase priority on majors and decreasing that backlog.

General - General permits were issued in 1990 as they are beginning to take on more importance with the promulgation of the storm water rule. More are expected in the coming years because they are more effective in dealing with stormwater.

[6]There were more adjudicatory hearings done in FY 1990 as more and more permittees objected to the strict limits being placed in permits. As the permits get more and more complex the permits get more and more controversial which explains the increased estimates for the next two fiscal years.
[7]Calculations are based on rate of non-compliance
[8]Fifty States and Puerto Rico have operational SRF programs

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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## WATER QUALITY
### Water Quality Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| PROGRAM | | | | | |
| Scientific Assessment - Water | | | | | |
| Salaries & Expenses | $259.1 | $310.0 | $310.0 | $371.3 | $61.3 |
| Research & Development | $334.8 | $312.5 | $312.5 | $322.4 | $9.9 |
| TOTAL | $593.9 | $622.5 | $622.5 | $693.7 | $71.2 |
| Monitoring Systems And Quality Assurance - Water | | | | | |
| Salaries & Expenses | $3,058.5 | $2,597.8 | $2,597.8 | $3,156.4 | $558.6 |
| Research & Development | $875.6 | $824.4 | $824.4 | $1,013.7 | $189.3 |
| TOTAL | $3,934.1 | $3,422.2 | $3,422.2 | $4,170.1 | $747.9 |
| Health Effects - Water | | | | | |
| Salaries & Expenses | $287.9 | $404.7 | $452.6 | | -$452.6 |
| TOTAL | $287.9 | $404.7 | $452.6 | | -$452.6 |
| Environmental Engineering And Technology - Water | | | | | |
| Salaries & Expenses | $2,348.6 | $2,031.0 | $2,031.0 | $1,973.6 | -$57.4 |
| Research & Development | $3,231.1 | $1,775.3 | $1,775.6 | $2,125.6 | $350.0 |
| TOTAL | $5,579.7 | $3,806.3 | $3,806.6 | $4,099.2 | $292.6 |
| Environmental Processes And Effects - Water | | | | | |
| Salaries & Expenses | $9,265.5 | $8,864.3 | $8,864.3 | $9,134.9 | $270.6 |
| Research & Development | $4,027.4 | $4,373.6 | $4,373.6 | $6,223.6 | $1,850.0 |
| TOTAL | $13,292.9 | $13,237.9 | $13,237.9 | $15,358.5 | $2,120.6 |
| Great Lakes Research - Water | | | | | |
| Salaries & Expenses | $617.6 | $467.8 | $467.8 | $481.1 | $13.3 |
| Research & Development | $1,399.4 | $1,699.4 | $1,699.4 | $4,099.4 | $2,400.0 |
| TOTAL | $2,017.0 | $2,167.2 | $2,167.2 | $4,580.5 | $2,413.3 |
| Oil Spills | | | | | |
| Salaries & Expenses | $236.4 | | | | 0.0 |
| Research & Development | $973.9 | $4,000.0 | $4,000.0 | | -$4,000.0 |
| TOTAL | $1,210.3 | $4,000.0 | $4,000.0 | | -$4,000.0 |
| TOTAL | | | | | |
| Salaries & Expenses | $16,073.6 | $14,675.6 | $14,723.5 | $15,117.3 | $393.8 |
| Research & Development | $10,842.2 | $12,985.2 | $12,985.5 | $13,784.7 | $799.2 |
| Water Quality Research TOTAL | $26,915.8 | $27,660.8 | $27,709.0 | $28,902.0 | $1,193.0 |

## WATER QUALITY
### Water Quality Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PERMANENT WORKYEARS** | | | | | |
| Scientific Assessment - Water | 2.8 | 5.0 | 5.0 | 6.0 | 1.0 |
| Monitoring Systems And Quality Assurance - Water | 47.9 | 49.4 | 49.4 | 58.4 | 9.0 |
| Health Effects - Water | 4.3 | 4.7 | 4.7 | | -4.7 |
| Environmental Engineering And Technology - Water | 35.9 | 36.7 | 36.7 | 36.7 | 0.0 |
| Environmental Processes And Effects - Water | 135.8 | 152.2 | 152.2 | 152.2 | 0.0 |
| Great Lakes Research - Water | 6.8 | 8.0 | 8.0 | 8.0 | 0.0 |
| Oil Spills | 3.7 | | | | 0.0 |
| TOTAL PERMANENT WORKYEARS | 237.2 | 256.0 | 256.0 | 261.3 | 5.3 |
| **TOTAL WORKYEARS** | | | | | |
| Scientific Assessment - Water | 4.6 | 5.0 | 5.0 | 6.0 | 1.0 |
| Monitoring Systems And Quality Assurance - Water | 53.1 | 49.4 | 49.4 | 58.4 | 9.0 |
| Health Effects - Water | 4.9 | 4.7 | 4.7 | | -4.7 |
| Environmental Engineering And Technology - Water | 37.1 | 36.7 | 36.7 | 36.7 | 0.0 |
| Environmental Processes And Effects - Water | 145.9 | 152.2 | 152.2 | 152.2 | 0.0 |
| Great Lakes Research - Water | 8.6 | 8.0 | 8.0 | 8.0 | 0.0 |
| Oil Spills | 3.8 | | | | 0.0 |
| TOTAL WORKYEARS | 258.0 | 256.0 | 256.0 | 261.3 | 5.3 |

## WATER QUALITY

### Water Quality Research

#### Principal Outputs

SCIENTIFIC ASSESSMENT

1992: o Initiate the development of a methodology to estimate exposure pathways from contaminated sediments (ie., fish, water column, plants).

o Development of bioaccumulation factors for the eleven metals related to the sixty-five ambient water quality criteria.

1991: o Provide technical support to the regions and states on existing water quality standards and revise ambient water quality criteria as necessary.

o Apply risk assessment methods for surface disposal to develop criteria. Investigate methods to incorporate those individuals highly exposed.

1990: o Prepare 7 new health advisories and respond to comments on 65 ambient water quality criteria addenda revisions.

o Finalized risk assessments for surface impoundment methodology and preliminary assessment for bacteria in land applied sludge.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1992: o Report on bioassessment protocols to support implementation of biocriteria.

o Provide the Regions validated analytical marine methods for chemical, fish tissue and sediment toxicity.

1991: o Report on feasibility study on the consolidation of wastewater and drinking water methods.

o Develop guidance manual for EPA and State use in evaluation/certification of toxicity testing laboratories.

o Provide report on survival, viability and detection of pathogenic protozoa in sludge.

1990: o Evaluated monitoring techniques and a generic approach to measurements of toxic compounds.

o Maintained discharge monitoring report as support for the quality assurance program.

o Reported on methods development, standardization and evaluation of toxicity tests for marine, estuarine and freshwater organisms.

HEALTH

1992: o Provide guidance on toxicity tests for determining the potential health hazard from substances in municipal waste waters and sludge.

1991: o Provide a comparison of fish bioassay with conventional toxicity testing.

ENVIRONMENTAL ENGINEERING
AND TECHNOLOGY

1992: o Develop preliminary design guidance for subsurface-flow constructed wetlands systems.

o Provide reports and summaries on sludge incineration studies.

1991: o Provide assessment of toxicants in storm water runoff.

1990: o Reported on the fate of toxic organic during sludge treatment.

o Reported on pilot-scale treatability studies on pesticides-manufacturing wastewater.

ENVIRONMENTAL PROCESSES
AND EFFECTS

1992: o Report on toxicity identification evaluations to marine sites.

1991: o Report on the application of wasteload allocation models to multiple discharge sources into estuaries.

o Report on dredge material assessment techniques.

o Provide scientific data on predicting effects of disturbance of water quality functions on wetlands.

o Develop a screening model to predict virus transport in ground water.

1990: o Provided report on validation of water quality criteria for Selenium.

o Reported on water quality functions of wetlands.

o Verified models used in 301(h) to define the zone of initial dilution and water quality parameters.

o Reported on the characterization of complex mixtures using a biomarker approach.

## WATER QUALITY

### Water Quality Research

Budget Request

The Agency requests a total of $28,902,000 supported by 261.3 total workyears for 1992, an increase of $1,193,000 and 5.3 total workyears. Of the request, $15,117,300 will be for the Salaries and Expenses appropriation and $13,784,700 will be for the Research and Development appropriation, an increase of $393,800 for Salaries and Expenses and a increase of $799,200 for Research and Development. The increase of Research and Development provides partial support for Agency initiatives in the Great Lakes and wetlands. Additional support has been provided these initiatives through re-prioritization within the media. The increases in Salaries and Expenses and total work years reflect additional inhouse support for monitoring and engineering activities.

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.

- This research provides the scientific base to help States develop water quality standards, conduct use-attainability analyses and implement the Agency's water quality based pollution control program.

- This activity provides the research needed by EPA for evaluating impacts of ocean disposal practices, conducts research on the Great Lakes ecosystems, develops responsive and scientifically valid estuarine and coastal waters programs, and up through FY 1991 provides national oils spills research.

- The wastewater research program provides the technical information, engineering and monitoring assistance needed by EPA, municipalities, and industry to develop and implement regulations, sludge disposal guidance, and pollution control from municipal treatment plants.

SCIENTIFIC ASSESSMENT

1992 Program Request

The Agency requests a total of $693,700 supported by 6.0 total workyears for this program, of which $371,300 will be for the Salaries and Expenses appropriation and $322,400 will be for the Research and Development appropriation. This represents an increase of $61,300 in the Salaries and Expenses appropriation, and a minor increase of $9,900 in the Research and Development appropriation. The increase in the Salaries and Expenses appropriation is requested to fund the Federal workforce needed to implement the President's program in 1992, and reflects 1.0 added workyear effort for

quantitative health risk assessments.

Research to support Post-BAT requirements will provide support to the Agency and States to update, modify, and implement health standards for ambient water quality and sediment criteria. ORD will develop health advisories to support effluent regulations for toxics and provide technical support to the Regions and States on risk assessments. In support of the CWA Amendments ORD will provide technical support to the Office of Water for developing and implementing their regulations on toxics in sludge. Criteria for assessing hazards and risk from exposure to bacteria in sludge will be developed. An approach using the most-exposed population will be developed for comparing disposal options for municipal sludge.

1991 Program

In 1991, the Agency is allocating a total of $622,500 supported by 5.0 total workyears for this program, of which $310,000 is from the Salaries and Expenses appropriation and $312,500 is from the Research and Development appropriation.

ORD is providing support to the Agency and States on health criteria for water quality, developing health advisories in support of effluent regulations, providing technical support for risk assessments, and developing criteria for assessing hazard and risk from bacteria in sludge.

1990 Accomplishments

In 1990, the Agency obligated a total of $593,900 supported by total of 4.6 workyears for this program, of which $259,100 was from the Salaries and Expenses appropriation and $334,800 was from the Research and Development appropriation.

Sixty-four ambient water quality documents were finalized. Support to the regions and states on criteria was provided. Draft pathogen land application methodology for use in risk assessments and a methodology for addressing risk from surface sludge impoundments were completed.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1992 Program Request

The Agency requests a total of $4,170,100 supported by 58.4 total workyears for this program, of which $3,156,400 will be for the Salaries and Expenses appropriation and $1,013,700 will be for the Research and Development appropriation. This represents increase of 9.0 workyears, $558,600 in the Salaries and Expenses appropriation, and $189,300 in the Research and Development appropriation. The increase in the Salaries and Expenses appropriation is requested to fund the Federal workforce needed to implement the President's program in 1992 and corresponds to the increase in workyears, while the increase in Research and Development represents support for the agency wide initiative for Great Lakes specifically through increased efforts on sediment quality activities.

The CWA Amendments place emphases on developing methods to measure and monitor water quality. In support of this activity, ORD will develop and

standardize methods and provide field tested protocols to assess ambient water quality. In addition, ORD will evaluate biological and microbial monitoring techniques and promulgate standardized tests to measure chronic toxicity. Additional research will develop the scientific data needed to support environmentally sound ocean disposal, wetlands, estuarine, and Great Lakes programs.

ORD will provide standardized analytical methods to the Regions, particularly in the estuarine and marine areas. ORD will conduct research on marine methods consistent with the Agency's priority for validated chemical, biological and sediment toxicity methods. Research will continue on methods for determining microbial quality in marine systems including standard methods to distinguish human and animal fecal contamination. Protocols for monitoring coastal waters, viruses in shellfish, and bacteria associated with fish diseases will be developed. Great Lakes research will focus on developing methods for analyzing contaminated sediments.

The monitoring research program will conduct semi-annual performance evaluation studies to review and revise the Agency's Quality Assurance support. Performance criteria will be developed for NPDES permit analysis, and investigation of analytical method deficiencies identified by NPDES permitters.

1991 Program

In 1991, the Agency is allocating a total of $3,422,200 supported by 49.4 total workyears for this program, of which $2,597,800 is from the Salaries and Expenses appropriation and $824,400 is from the Research and Development appropriation.

ORD is evaluating chemical monitoring methods and protocols designed to measure marine and estuarine water quality. The program also 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 fresh water quality and quantifying contaminants in sediments and sludge to the Agency and States.

1990 Accomplishments

In 1990, the Agency obligated a total of $3,934,100 supported by 53.1 total workyears for its monitoring and quality assurance program in water quality, of which $3,058,500 was from the Salaries and Expenses appropriation and $875,600 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), ORD evaluated monitoring methods for measuring toxic compounds. A series of discharge monitoring reports were provided to the Regions and States. 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

### 1992 Program Request

The Agency has not requested resources for this activity. This represents a decrease of $452,600 for Salaries and Expenses and 4.7 in total workyears. All remaining research will be completed during fiscal year 1991. These resources have been reprogrammed to support the Office of Waters' disinfection/disinfection by-products activities.

### 1991 Program

In 1990, the Agency is allocating a total of $452,600 supported by 4.7 total workyears for this program, of which $452,600 is from the Salaries and Expenses appropriation and no dollars from the Research and Development appropriation.

This inhouse research program is providing guidance on toxicity tests for determining the potential hazard from substances in municipal wastewater sludge. This work is to be completed during fiscal year 1991.

### 1990 Accomplishments

In 1990, the Agency obligated a total of $287,900 supported by 4.9 total workyears for this program, of which $287,900 was from the Salaries and Expenses appropriation and no dollars from the Research and Development appropriation.

Research activities focused on the validity of fish toxicity bioassays against conventional toxicity testing to determine if fish assays could be substituted.

## ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

### 1992 Program Request

The Agency requests a total of $4,099,200 supported by 36.7 total workyears for this program, of which $1,973,600 will be for the Salaries and Expenses appropriation and $2,125,600 dollars for the Research and Development appropriation. This represents a decrease of $57,400 from the Salaries and Expenses appropriation, an increase of $350,000 in the Research and Development appropriation and no change in workyears. The decrease in Salaries and Expenses represents a realignment while the increase in Research and Development represents additional support for sediment quality activities providing benefits to the Great Lakes and other bodies of water.

ORD will evaluate new wastewater technologies that promise improved economics or effectiveness primarily for small communities (i.e., constructed wetlands). Results will be provided to states, municipalities, and design professionals. ORD will provide technical assistance to support the update of sludge regulations and conduct research to support the Agency's storm and combined sewer overflow program. Cost effective control technology for contaminated sediments will be initiated.

1991 Program

In 1991, the Agency is allocating a total of $3,806,600 supported by 36.7 total workyears for this program, of which $2,031,000 is from the Salaries and Expenses appropriation and $1,775,600 is from the Research and Development appropriation.

ORD are evaluating new conveyance and treatment technologies. The results will be provided to States, municipalities, and design professionals. Technical investigations are being conducted on the infrastructure of Publicly Owned Treatment Works (POTWs). Results will be provided to the municipalities to help them realize full value of these investments and properly operate and maintain the facilities. ORD is providing technical assistance and research to support the Agency's storm and combined sewer overflow program mandated by the Clean Water Act. Research and technical assistance is being continued in support of sludge regulation implementation and revision.

Congressional Directives. A total of $2,750,000 is for the Congressionally-directed projects to study sludge-to-oil reaction ($250,000), the Denver Water Reuse Demonstration Project ($500,000), and oil spills ($2,000,000).

1990 Accomplishments

In 1990, the Agency obligated a total of $5,579,700 supported by 37.1 total workyears for this program, of which $2,348,600 was from the Salaries and Expenses appropriation and $3,231,100 from the Research and Development appropriation.

Major accomplishments included pilot-scale treatability studies on wastewater from pesticide manufacturers; technical support to the Office of Water for developing sludge regulations, assessment of toxics treatability, development of toxicity reduction evaluation procedures and removal capabilities. Technical assistance was provided to the Office of Water for the development of stormwater permitting guidelines.

ENVIRONMENTAL PROCESSES AND EFFECTS

1992 Program Request

The Agency requests a total of $15,358,500 supported by 152.2 total workyears for this program, of which $9,134,900 will be for the Salaries and Expenses appropriation and $6,223,600 will be for the Research and Development appropriation. This represents an increase of $270,600 from the Salaries and Expenses appropriation, an increase of $1,850,000 from the Research and Development appropriation, and no change from total workyears. The increase in Salaries and Expenses and in Research and Development is requested to fund the Federal workforce needed to implement the President's program in 1992, and represents additional support for the "No Net Loss" goal for wetlands and for sediment quality activity. The sediment quality increase will benefit both the Great Lakes and other water bodies.

In response to the Post-BAT requirements of the CWA Amendments, the ORD 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. ORD will
provide methodologies to assess water quality functions of wetlands, assess individual and cumulative impacts of wetland conversions, and evaluate means of mitigating wetland impacts. Increased emphasis will be given to research on sediment quality and wetlands as part of the Agency's initiative on ecology. The data from these studies will assist the States in developing strategies for controlling and understanding toxic sediment pollutants in both small and large water bodies and in implementing "No net Loss" goals for wetlands.

In addition, ORD will develop assessment procedures to evaluate impacts due to ocean disposal of wastes in coastal waters. The integration of these procedures will help determine the relative safety of ocean disposal and provide comparison of alternative disposal strategies. Research will be conducted to support the Agency's goal to reduce pollution in near coastal waters. This research program will focus on recovery of coastal ecosystems, developing biomarker assessment methods, coastal eutrophication problems and developing wasteload allocation models for estuarine and coastal waters.

The gas chromatograph/mass spectroscopy tape library will be maintained and updated. Growing data bases will provide additional information on wastewater treatment technology needed to support the NPDES program and further research will be conducted on ecological fate and effects issues associated with wetlands constructed for the treatment of wastewater from small municipal discharges and acid mine drainage.

1991 Program

In 1991, the Agency is allocating a total of $13,237,900 supported by 152.2 total workyears for this program, of which $8,864,300 is from the Salaries and Expenses appropriation and $4,373,600 is from the Research and Development appropriation.

Research is being conducted on methods to integrate whole effluent testing procedures with chemical specific control technology. Methods to assess water quality functions and ecological impacts associated with wetlands, the cumulative loss and mitigation of impacts on wetlands are being developed. Research is being conducted to provide methods to better assess the impacts of ocean disposal. These procedures will be used in risk assessments. Estuarine and near coastal waters research is focused on ecosystem recovery, eutrophication, wasteload allocation and biomarkers as assessment techniques in coastal waters. The gas chromatograph/mass spectroscopy tape library is being maintained and updated. Research on ecological fate and effects of constructed wetlands is being conducted.

Congressional Directives. A total of $400,000 is for the Congressionally directed project to do research at the National Resources Institute Minerals Research Laboratory on removing toxicity from materials using mining technology.

1990 Accomplishments

In 1990, the Agency obligated a total of $13,292,900 supported by 145.9 total workyears for this program, of which $9,265,500 was from the Salaries and

Expenses appropriation and $4,027,400 was from the Research and Development appropriation.

Major accomplishments include a report on the role of atmospheric nitrogen in estuarine eutrophication, a critical review of waste load allocation practices for estuaries, a synopsis of methods for biomonitoring of inland wetlands, a report on applicability of current water quality to wetlands, and a research plan for coastal waters biomarker assessment methods.

GREAT LAKES RESEARCH

1992 Program Request

The Agency requests a total of $4,580,500 supported by 8.0 total workyears for this program, of which $481,100 will be for the Salaries and Expenses appropriation and $4,099,400 will be for the Research and Development appropriation. This represents an increase of $13,300 in the Salaries and Expenses appropriation, an increase of $2,400,000 in the Research and Development appropriation, and no change from total workyears. The increase in Salaries and Expenses is a minor adjustment while the increase in Research and Development represents additional support for the Administrator's Great Lakes initiative through additional activity for research of exotic species such as zebra mussels and for mass balance modeling. There are a number of research activities contributing to improvement of water quality of the Great Lakes in addition to those specifically directed to Great Lakes in this program element. These include Contaminated Sediments, also supported under Water Quality, and Environmental Management and Assessment Program (EMAP), supported under Multimedia.

The objective of this program is to provide the scientific basis for cost-effective reduction of human and ecological risk associated with Great Lakes usage. In 1992, ORD will continue to develop and test methods to determine the sources, bioaccumulation, and fate of toxic chemicals in the Great Lakes. The program will accelerate the validity of uncertainty of model predictions. ORD will develop GIS-based information systems for each lake basin and will be networked into a single computer. Work will begin to develop regional airshed and watershed models to better define the distribution mechanisms for toxic chemicals.

Increased emphasis will be placed on assessing the impacts and consequences of zebra mussels and other nonindigenous species. Increased funding for this research is provided in 1991; continued funding is requested in 1992. Contaminated sediment research in the Great Lakes will be coordinated with the National program to develop sediment quality criteria. The entire Great Lakes research program will be closely coordinated with EMAP-Great Lakes, funded under multimedia, which in 1992 will expand to cover all five of the Great Lakes.

1991 Program

In 1991, the Agency is allocating a total of $2,167,200 supported by 8.0 total workyears for this program, of which $467,800 is from the Salaries and Expenses appropriation and $1,699,400 is from the Research and Development appropriation.

In 1991 the program will emphasize research to develop mass balance models, Geographical Information System (GIS) based environmental data bases and decision-making systems, and technologies to assess contaminated sediment. Confined disposal facilities will be evaluated. Research on indicators and sampling methods for the Great Lakes EMAP program, funded under multimedia, and ecological effects of the zebra mussel is being conducted.

Congressional Directive. A total of $250,000 is for the Congressionally-directed project to conduct research on non-indigenous species in the Great Lakes.

1990 Accomplishments

In 1990, the Agency obligated a total of $2,017,000 supported by 8.6 total workyears for this program, of which $617,600 was from the Salaries and Expenses appropriation and $1,399,400 was from the Research and Development appropriation.

Among the many accomplishments of the Great Lakes research program were: completion of "screening level" mass balance models for Lake Ontario and the Niagara River; completion of a major demonstration modeling project for Green Bay; completion of an "In-place Pollutant Study" of sediments in the Detroit River; completion of a sediment evaluation methods report for the Michigan Department of Natural Resources (DNR); development of sediment sampling technologies; and completion of an interagency workplan for development of an environmental information and decision-making system (GIS) for the Rouge/Detroit River watershed.

OIL SPILLS

1992 Program Request

Support for the oil spills activities have been transferred as a total program to Hazardous Waste Media Monitoring Systems and Quality Assurance, Environmental Engineering and Technology, and Envrionmental Processes and Effects beginning with 1992. This choice was made because of its more direct association with Resource Conservation and Recovery Act activity both in planning and execution.

1991 Program

In 1991, the Agency is allocating a total of $4,000,000 for this program, of which all is for the Research and Development appropriation.

In 1991 Agency research is finalizing results for and providing technical support at Prince William Sound. The new national oils spills research program is providing the scientific and engineering data required by on-site coordinators to choose the most cost-effective and environmentally sound options for dealing with spills. These options will include determining the effectiveness of the removal processes. The research is divided into three areas: biological and chemical cleanup techniques, cleanup operation monitoring techniques and mechanical cleanup techniques for inland spills.

1990 Accomplishments

In 1990, the Agency obligated a total of $1,210,300 supported by 3.8 total workyears for this program of which $236,400 was for the Salaries and Expense appropriation and $973,900 was for the Research and Development appropriation. Additional funds were provided by Exxon through the Federal Technology Transfer Act.

Among the accomplishments were: development of biological enhancement through nutrient application for remediation of oil soaked beaches, determination of optimum application rates in cold water regions, acceptance by Exxon of nutrient application use on approximately thirty-five miles of beach.

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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## WATER QUALITY
### Water Quality And Grants Program Management

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Water Quality Management | | | | | |
| Salaries & Expenses | $5,550.8 | $6,144.2 | $6,144.0 | $6,602.0 | $458.0 |
| Abatement Control and Compliance | $2,166.1 | $7,522.0 | $7,522.0 | $4,322.0 | -$3,200.0 |
| TOTAL | $7,716.9 | $13,666.2 | $13,666.0 | $10,924.0 | -$2,742.0 |
| Great Lakes Program | | | | | |
| Salaries & Expenses | $2,542.0 | $3,183.4 | $3,183.4 | $3,487.2 | $303.8 |
| Abatement Control and Compliance | $10,438.2 | $13,223.7 | $13,223.7 | $9,523.7 | -$3,700.0 |
| TOTAL | $12,980.2 | $16,407.1 | $16,407.1 | $13,010.9 | -$3,396.2 |
| Chesapeake Bay Program | | | | | |
| Salaries & Expenses | $1,469.8 | $1,497.6 | $1,497.6 | $1,545.0 | $47.4 |
| Abatement Control and Compliance | $11,309.3 | $14,748.8 | $14,748.8 | $14,748.8 | 0.0 |
| TOTAL | $12,779.1 | $16,246.4 | $16,246.4 | $16,293.8 | $47.4 |
| TOTAL: | | | | | |
| Salaries & Expenses | $9,562.6 | $10,825.2 | $10,825.0 | $11,634.2 | $809.2 |
| Abatement Control and Compliance | $23,913.6 | $35,494.5 | $35,494.5 | $28,594.5 | -$6,900.0 |
| Water Quality and Grants Program Management TOTAL | $33,476.2 | $46,319.7 | $46,319.5 | $40,228.7 | -$6,090.8 |
| **PERMANENT WORKYEARS** | | | | | |
| Water Quality Management | 99.8 | 107.9 | 107.9 | 113.2 | 5.3 |
| Great Lakes Program | 33.8 | 42.0 | 42.0 | 47.4 | 5.4 |
| Chesapeake Bay Program | 14.7 | 11.4 | 11.4 | 12.0 | 0.6 |
| TOTAL PERMANENT WORKYEARS | 148.3 | 161.3 | 161.3 | 172.6 | 11.3 |
| **TOTAL WORKYEARS** | | | | | |
| Water Quality Management | 105.2 | 113.2 | 113.2 | 113.2 | 0.0 |
| Great Lakes Program | 37.3 | 45.4 | 45.4 | 47.4 | 2.0 |
| Chesapeake Bay Program | 15.7 | 12.0 | 12.0 | 12.0 | 0.0 |
| TOTAL WORKYEARS | 158.2 | 170.6 | 170.6 | 172.6 | 2.0 |

## Water Quality and Grants Program Management

### Budget Request

The Agency requests a total of $40,228,700 supported by 172.6 total workyears for 1992, a decrease of $6,090,800 and an increase of 2.0 total workyears from 1991. Of the request, $11,634,200 will be for the Salaries and Expenses appropriation and $28,594,500 will be for the Abatement, Control and Compliance Appropriation. This represents an increase of $809,200 in the Salaries and Expense Appropriation and a decrease of $6,900,000 in the Abatement, Control and Compliance Appropriation.

### WATER QUALITY MANAGEMENT

### 1992 Program Request

The Agency requests a total of $10,924,000 supported by 113.2 total workyears for this program, of which $6,602,000 will be for the Salaries and Expenses appropriation and $4,322,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $458,000 in Salaries and Expenses, and a decrease of $3,200,000 Abatement, Control and Compliance, and no change in total workyears. The increases in Salaries and Expenses reflects increased personnel costs. The decrease in Abatement, Control and Compliance reflects Congressional add-ons in 1991 not carried through to 1992. The reduction is partially offset by increases to support expanded efforts in the nonpoint source (NPS) pollution prevention and control program and NPS pollution prevention in high risk watersheds.

In 1992, as part of the President's ecological protection initiative, EPA will increase emphasis on nonpoint source management to assist states in addressing those priority watersheds most at risk from NPS pollution. The ecological initiative will stress an integrated, cooperative approach to implement geographically-targeted controls with special emphasis on non-traditional pollution sources impacting state priority watersheds identified through the state section 319 management program. The decreases reflect completion of one-time Congressionally mandated projects in 1991.

EPA will continue providing NPS program direction, management and oversight to help states strengthen the base structure for targeted watershed management using improved state 319 management programs. This assistance will include increased emphasis on the application of best management practices (BMPs). We will work on developing the BMP guidance required by the Coastal Zone Management Act reauthorization.

The Agency will develop and issue guidance supporting the creation of strong state/local watershed management alliances among natural resources agencies. These alliances will enable states to better use the programs, policies, and delivery systems of related Federal programs from U.S. Department of Agriculture (USDA), Forest Service, National Oceanic Atmospheric Administration (NOAA), Fish & Wildlife Service (FWS), and others to provide water

Federal alliances through Memoranda of Understanding (MOUs) and better field cooperation to support state NPS efforts.

The Agency will establish a national program for integrated watershed protection, including guidance, technical assistance, workshops, and a clearinghouse. EPA will work with Federal agencies to develop and catalogue baseline BMPs for priority NPS sectors and will sponsor a national NPS Forum to consolidate consensus among Federal agencies, states, localities and citizens on actions needed to further NPS management.

EPA will support innovative state approaches to address NPS problems from agriculture, mining, and forestry and will devote special emphasis to work with USDA on the President's Water Quality Initiative to assure effective linkages with state 319 programs. Improved strategies by States and local governments with EPA assistance for linking needed NPS controls and stormwater permits will be developed to address significant urban runoff problems.

The Agency will continue to provide basic eligibility and management guidance for sections 106 and 205(j)(1)/604(b) grants to states, interstate agencies, Indian Tribes and Regional Comprehensive Planning Organizations (RCPOs). The Agency will allocate funds, review state work programs and evaluate state and other agency performance.

1991 Program

The Agency is allocating a total of $13,666,000 supported by 113.2 total workyears for this program, of which $6,144,000 is from the Salaries and Expenses appropriation and $7,522,000 is from the Abatement, Control and Compliance appropriation.

In 1991, EPA, having approved (or approved portions) of all state section 319 NPS management programs, is continuing to award grants to states to implement both statewide NPS initiatives and targeted watershed NPS controls.

The Agency is assisting states to use risk-based approaches to identify impacts of NPS pollution on sensitive aquatic resources and target needed controls; supporting state implementation of priority agricultural elements of approved state NPS management programs in concert with the President's Water Quality Initiative; and coordinating its NPS activities with USDA's water quality initiative by taking advantage of USDA's extensive delivery system.

EPA is providing direction and technical support to help states implement geographically-targeted NPS management programs, emphasizing prevention and control activities in specific watersheds at highest risk. The Agency is also assisting states in designing prevention and control programs for urban runoff not regulated by stormwater permits.

Headquarters is overseeing Regional efforts to manage funds to states through new cooperative agreements under section 104(b)(3) and allocating section 106 grant funds to states and qualified Indian tribes, with emphasis on building strong Indian tribal institutions fully capable of managing EPA grants.

EPA is providing management oversight to existing Clean Lake projects and is reviewing and approving state lake grant applications under the competitive section 314 program.

Congressional Directives. A total of $5,200,000 is for the Congressionally directed projects Lake Champlain Management Conference ($2,000,000), the Northwest Indian Tribes model NPS program ($1,500,000), the New Jersey Water Quality Activities ($450,000), and the Lake Onondaga Management Conference ($1,250,000).

1990 Accomplishments

In 1990, the Agency obligated a total of $7,716,900 supported by 105.2 total workyears for this program, of which $5,550,800 was from the Salaries and Expenses appropriation and $2,166,100 was from the Abatement, Control and Compliance appropriation.

EPA approved 51 state section 319 NPS assessment reports and reviewed and approved all or portions of state management programs. EPA worked with states to upgrade and implement these programs by providing technical support, guidance and oversight. The Agency also developed section 319 grants guidance and allocations for FY 1990; allocated NPS implementation funds; and made initial state grants, including bonus grants to selected exemplary states. A final EPA report to Congress, summarizing the states' progress in implementing section 319 requirements and recommending needed programmatic changes, was prepared. Headquarters provided guidance on basic grants management functions for grants to states under section 106 and section 205, and evaluated the performance of selected Indian tribes' water quality programs.

The Regions negotiated state work programs and managed grant funds under sections 106 and 205(j)(5) to approximately 203 state/interstate/regional organizations and qualified Indian tribes, ensuring that funds were targeted carefully to meet critical water quality needs. To accomplish this, the Regions issued guidance and funding targets for specific priority activities, provided technical and management assistance, tracked and evaluated grantee performance and assured that states met their level-of-effort requirements.

The Agency provided management oversight to 150 Clean Lake projects. EPA reviewed and approved state lake water quality assessments, prepared reports to Congress on the status of lake water quality and progress achieved under the section 314(d) Demonstration Program, provided a technical supplement to the Lake and Reservoir Restoration guidance manual and continued efforts to validate various restoration methodologies.

GREAT LAKES PROGRAM

1992 Program Request

The Agency requests a total of $13,010,900 supported by 47.4 total workyears for this program, of which $3,487,200 will be for the Salaries and Expenses appropriation and $9,523,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $303,800 in the Salaries

and Expenses appropriation, an increase of 2.0 in total workyears, and a decrease of $3,700,000 in the Abatement, Control and Compliance appropriation. The increase in Salaries and Expenses supports the increase in total workyears and increased support costs for the RV Lake Guardian. The decrease in Abatement, Control and Compliance reflects expiration of Congressional add-ons for specific projects within the Great Lakes basin. The increase in workyears reflects increased support for the Lake Ontario Mass Balance Study and the Assessment and Remediation of Contaminated Sediments (ARCS) program.

Under the Clean Water Act (CWA) the Great Lakes Water Quality Agreement (GLWQA) with Canada, and the Great Lakes Critical Programs Act of 1990, the Great Lakes National Program Office (GLNPO) will continue to provide technical and management support for Remedial Action Plans (RAPs) and Lakewide Management Plans (LAMPs) and pollution prevention and control activities to protect critical habitats, surface water and ground water in the Great Lakes Basin. GLNPO's ARCS program will complete pilot field demonstrations of promising technologies to abate contaminated sediment problems at several locations and begin preparing a final report to Congress on the results of the demonstrations. Work will continue on initiatives in support of the Binational Pollution Prevention Strategy and the U.S. Action Plan for its implementation. GLNPO will continue to coordinate with Regions II, III, and V on water quality criteria and standards and on technical matters in the development, review and compliance of permits related to GLWQA requirements. Great Lakes monitoring and source assessment activities, including operational surveys by the RV Lake Guardian, will continue through annual programs for conventional and toxic pollutants, for collection, analyses, and reporting on both open lake migratory and near shore non-migratory fish, and for collection of precipitation samples through the Great Lakes Atmospheric Deposition (GLAD) network for the analyses of metals, nutrients, and organic toxics. These analyses will be used to determine metals and nutrient loadings to the Great Lakes as a basis for the design and operation of pollution abatement programs.

GLNPO will continue to work with states, Regions, U.S. Fish and Wildlife Service (USFWS), U.S. Coast Guard (USCG), U.S. Department of Agriculture (USDA), National Oceanic and Atmospheric Administration (NOAA), and U.S. Army Corps of Engineers (COE), to develop an integrated strategic plan for gathering and managing Great Lakes environmental data. GLNPO will continue to participate in the Great Lakes Water Quality Initiative. The program office will continue to prepare the Reports to Congress and the IJC, and to convene and participate in bilateral U.S./Canadian committees and task forces as the U.S. lead on GLWQA implementation.

1991 Program

The Agency is allocating a total of $16,407,100 supported by 45.4 total workyears for this program, of which $3,183,400 is from the Salaries and Expenses appropriation and $13,223,700 is from the Abatement, Control and Compliance appropriation.

GLNPO is increasing support to Regions II and V for state/local development of RAPs. Stage I LAMPs for Lakes Ontario and Michigan are being accelerated and readied for submission to the International Joint Commission (IJC). Ten Stage I and three Stage II RAPs are being submitted to the IJC. GLNPO's ARCS program continues with pilot field demonstrations of promising technologies to abate

contaminated sediment problems at several locations. The ARCS projects support RAP implementation by determining feasible technologies for abatement of contaminated sediments, a problem identified in most of the Areas of Concern (AOC). GLNPO, in conjunction with the COE, the New York Department of Conservation, and EPA Region II, is initiating dredging and disposal of contaminated sediments in the Buffalo River. The Agency's replacement research vessel, RV Lake Guardian, is being outfitted with laboratory modules for toxics monitoring needs and is beginning operational surveys. The Green Bay Mass Balance study is completed including a joint study with the National Oceanic and Atmospheric Administration (NOAA) on the Green Bay hydrology and sediment flux.

An Agency Five Year Strategic Plan for the Great Lakes to reduce toxics and protect/restore habitat and species diversity while controlling nutrients is being completed through the combined efforts of GLNPO, states, Regions and Headquarters and with the involvement of the public. A Binational Pollution Prevention Strategy and an accompanying U.S. Action Plan for implementation are being announced and action on binational initiatives beginning. GLNPO, states, Regions, USFWS, and USCG are beginning a comprehensive review of the U.S. Great Lakes monitoring programs to develop an integrated strategic plan for gathering Great Lakes environmental data. In addition, the Agency is completing a study on the effectiveness and efficiency of the Great Lakes National Program Office.

Congressional Directives. A total of $4,200,000 is for Congressionally directed projects including innovative program initiatives, efforts to mitigate the zebra mussel problem, funding for the large lakes laboratories in Duluth, Minnesota and Grosse Ile, Michigan, initial work on clean up of contaminated sediments in Buffalo River, and upgrading shoreside facilities in Bay City, Michigan for the new Great Lakes research vessel.

1990 Accomplishments

In 1990 the Agency obligated a total of $12,980,200 supported by 37.3 total workyears for this program, of which $2,542,000 was from the Salaries and Expenses appropriation and $10,438,200 was from the Abatement, Control and Compliance appropriation.

GLNPO, in cooperation with Regions II and V, provided technical support to state/local agencies to develop RAPs and participated in initial LAMP development work for Lakes Ontario and Michigan. The ARCS program initiated bench-scale demonstrations of promising technologies and preliminary work for pilot-scale demonstrations in the field. Progress was made in 1990 toward developing technical protocols, site selection criteria, and procedures. The refitting of the RV Lake Guardian to Coast Guard specifications was completed, and arrangements were made to home port the vessel in Bay City, Michigan. GLNPO completed joint field work with NOAA on the Green Bay hydrology and sediment flux. The Green Bay Mass Balance study developed predictive models for identification, transport, and fate of toxic substances.

GLNPO provided continuing technical support for and tracking of various state-level nonpoint source control programs to implement the U.S. phosphorus reduction plan. Great Lakes monitoring and source assessment activities continued through annual programs for conventional and toxic pollutants.

## CHESAPEAKE BAY PROGRAM

### 1992 Program Request

The Agency requests a total of $16,293,800 supported by 12.0 total workyears for this program. Of the request, $1,545,000 will be for the Salaries and Expenses appropriation and $14,748,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $47,400 in the Salaries and Expense appropriation. There is no change in the Abatement, Control and Compliance appropriation or total workyears.

Under the Clean Water Act (CWA) and the Chesapeake Bay Agreement (CBA), the Chesapeake Bay Liaison Office (CBLO) will continue to provide technical and management support for pollution prevention and control activities to protect critical habitats, surface water, and ground water. The Agency will continue to meet its expanded responsibilities under the CBA in concert with the States of Pennsylvania, Maryland, and Virginia, the District of Columbia, the Chesapeake Bay Commission, and the Agency. The CBLO will continue management of state nonpoint source control and monitoring grants, and will provide overall program coordination, computer services/data management, administrative and public information support. Also, technical advisory services to the program's Executive Council, advisory committees, and subgroups established to carry out the terms of the CBA will continue.

In support of the President's ecological protection initiative, the Agency will continue funding for implementation of the Chesapeake Bay Basinwide Toxics Reduction Strategy. This strategy includes: 1) research on the fate, transport and effects of toxics on the Bay ecosystem through the joint EPA and National Oceanic and Atmospheric Administration (NOAA) toxics research program (this will include research and monitoring of atmospheric deposition loadings of toxics to the Bay); 2) continuing pollution prevention initiatives including the continued enhancement of Bay basin states' pesticides management programs; and 3) development of a basinwide toxics database and future investigation of the extent and toxicity of contaminated sediments in the Bay.

### 1991 Program

The Agency is allocating a total of $16,246,400 supported by 12.0 total workyears for this program, of which $1,497,600 is from the Salaries and Expenses appropriation and $14,748,800 is from the Abatement, Control and Compliance appropriation.

The CBLO is completing a review of the Bay monitoring program. CBLO, the states, and the District of Columbia are defining nutrient loads and contributing to the reevaluation of the nutrients reduction goal and reassessment of costs. The goal of the basinwide nutrient reduction strategy is to achieve at least a 40 percent reduction from 1985 levels of nutrients entering the Bay's mainstem by the year 2000. The CBLO and the U.S. Army Corps of Engineers are completing the time varying model for use in the reevaluation of the 40 percent nutrient reduction goal. Toxic studies, expanded monitoring data, pesticide management

demonstrations and use surveys, analytical capabilities surveys, toxic loading inventories, and the continued implementation of the Basinwide Toxics Reduction Strategy are being used by CBLO and others to refine and redirect the Strategy and improve regulatory efforts. States are using and analyzing the data from a CBLO pesticide survey to support improvements in the their pesticide management programs. The CBLO is also developing a pesticide index and registry as a pollution prevention initiative to assist in reducing the risk of nonpoint source pesticide pollution.

The program is working to expand toxics data to include atmospheric deposition data. CBLO is continuing activities to ensure public involvement in protecting and restoring living resources and water quality. It is producing reports, fact sheets, and media releases and is a participant and contributor to the Agency's ongoing Near Coastal Waters technology transfer activities. CBLO is also cooperating in a special stormwater management demonstration project on the Patuxent River.

Congressional Directives. A total of $4,050,000 is for the Congressionally directed projects of toxics research in the Chesapeake Bay and a stormwater management demonstration project on the Patuxent River.

1990 Accomplishments

In 1990, the Agency obligated a total of $12,779,100 supported by 15.7 total workyears for this program, of which $1,469,800 was from the Salaries and Expenses appropriation and $11,309,300 was from the Abatement, Control and Compliance appropriation.

The CBLO continued to work with the Bay states to implement the elements of the CBA. This included completion of development policies and guidelines; development of the Toxics of Concern List; toxicity assessments of living resource habitats, particularly shallow nearshore habitats in cooperation with the Fish and Wildlife Service; estuarine sediment bioassay development and validation; and research on matters relating to ecological risk assessment, in cooperation with NOAA. CBLO also undertook a pesticides use survey based on the findings of the Office's 1988 surface microlayer study; provided technical and management leadership in nutrient reduction and the emerging problems of persistent toxics in the Bay basin; and initiated and completed two required Maryland studies -- the Rock Creek clean-up program study and the Patuxent River Demonstration Site study for pollution management and control. Environmental results from the Program's actions are now recognized in downward trends in phosphorus and in some recovery in submerged Bay grasses.

## WATER QUALITY
### Effluent Standards & Guidelines

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Effluent Standards & Guidelines | | | | | |
| Salaries & Expenses | $3,052.7 | $3,463.8 | $3,463.8 | $3,761.6 | $297.8 |
| Abatement Control and Compliance | $6,868.8 | $9,463.6 | $9,463.6 | $9,463.6 | 0.0 |
| TOTAL | $9,921.5 | $12,927.4 | $12,927.4 | $13,225.2 | $297.8 |
| TOTAL: | | | | | |
| Salaries & Expenses | $3,052.7 | $3,463.8 | $3,463.8 | $3,761.6 | $297.8 |
| Abatement Control and Compliance | $6,868.8 | $9,463.6 | $9,463.6 | $9,463.6 | 0.0 |
| Effluent Standards & Guidelines TOTAL | $9,921.5 | $12,927.4 | $12,927.4 | $13,225.2 | $297.8 |
| **PERMANENT WORKYEARS** | | | | | |
| Effluent Standards & Guidelines | 43.5 | 48.5 | 48.5 | 48.5 | 0.0 |
| TOTAL PERMANENT WORKYEARS | 43.5 | 48.5 | 48.5 | 48.5 | 0.0 |
| **TOTAL WORKYEARS** | | | | | |
| Effluent Standards & Guidelines | 45.3 | 48.5 | 48.5 | 48.5 | 0.0 |
| TOTAL WORKYEARS | 45.3 | 48.5 | 48.5 | 48.5 | 0.0 |

## Effluent Standards and Guidelines

### Budget Request

The Agency requests a total of $13,225,200 supported by 48.5 total workyears for 1992, an increase of $297,800 and no change in total workyears from 1991. Of the request, $3,761,600 will be for the Salaries and Expense appropriation and $9,463,600 will be for the Abatement, control and Compliance appropriation. This represents an increase of $297,800 in the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance appropriation.

### EFFLUENT STANDARDS AND GUIDELINES

#### 1992 Program Request

In 1992, the Agency requests a total of $13,225,200 supported by 48.5 total workyears for this program, of which $3,761,600 will be for the Salaries and Expenses appropriation and $9,463,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $297,800 in Salaries and Expenses and no change in the Abatement, Control and Compliance appropriation and total workyears. The increase in Salaries and Expenses reflects increased personnel costs.

The effluent standards and guidelines program will continue to develop controls or guidance for the unregulated industries and pollutants as identified in the January 2, 1990, Section 304(m) notice. The Agency will promulgate regulations for the offshore oil and gas industry and the pesticides manufacturing industry, and propose a revision for the remanded portion of the regulations for the organic chemicals, plastics and synthetic fibers industries. EPA will continue development of regulations for machinery manufacturing and rebuilding, pesticides formulating and packaging, pharmaceuticals, coastal oil and gas, and pulp and paper industries. The Agency will publish an updated Effluent Guidelines Plan in the next Section 304(m) notice, continue evaluation of other categories listed in the 1990 and 1992 notices, and continue development of analytical methods, analytical service support, technical assistance for permit writers and publicly-owned treatment work (POTW) operators, and support for pollution prevention activities.

#### 1991 Program

In 1991, the Agency is allocating a total of $12,927,400 supported by 48.5 total workyears for this program, of which $3,463,800 is from the Salaries and Expenses appropriation and $9,463,600 is from the Abatement, Control and Compliance appropriation.

The effluent standards and guidelines program continues to develop controls or guidance for the unregulated industries and pollutants as identified in the section 304(m) notice. The Agency is proposing regulations for the offshore oil and gas industry and the pesticides manufacturing industry and is publishing two

draft technical guidance studies (timber, petroleum refining). The Agency also is pursuing development of regulations for an unregulated industry cited by the Domestic Sewage Study (DSS) as contributing considerable quantities of hazardous and toxic wastes to POTWs and surface waters (centralized waste treatment, Phase II).

Headquarters continues to review the following industries: onshore and coastal oil and gas, pharmaceuticals, pesticides formulating/packaging and pulp and paper. The Agency is also developing the proposed regulation covering the remanded portion of the organic chemicals, plastics and synthetic fibers regulation. Analytical methods development continues, and the Sample Control Center continues to provide the analytical service (3,000 samples) required for regulatory development, enforcement activities, hazardous waste programs and Superfund activities.

Headquarters provides post-promulgation negotiation and litigation support for several industries and is publishing one final amendment (organic chemicals). The Agency is also conducting an analytical methods conference and four comprehensive technical workshops for state and local permit writers and POTW operators. The program, as part of the ongoing development of effluent guidelines, fully and effectively addresses pollution prevention, water conservation and cross-media impacts. The program is expanding technology transfer to promote rapid implementation of pollution prevention concepts and techniques.

1990 Accomplishments

In 1990, the Agency obligated a total of $9,921,500 supported by 43.5 total workyears for this program, of which $3,052,700 was from the Salaries and Expenses appropriation and $6,868,800 was from the Abatement, Control and Compliance appropriation.

In 1990, the effluent guidelines and standards program addressed toxic dischargers through development of effluent limitations and guidance or preliminary data summaries for the non-regulated industries identified in the DSS, including transportation, paint manufacturing/formulating, centralized waste treatment, drum reconditioning, waste oil recovery, machinery manufacturing and rebuilding, and hospitals. A major emphasis in rulemaking activities was the development of proposed limitations for the offshore oil and gas industry and the continued development of proposed regulations for several other industries, including pesticide manufacturing, pesticide formulating/packaging, pharmaceuticals, pulp and paper, centralized waste treatment and machinery manufacturing and rebuilding. The section 304(m) notice was published on January 2, 1990, and announced the Agency's plans for developing new and revised effluent guidelines and standards.

The program continued analytical methods development and validation 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 provided a wide diversity of analytical capability services to support effluent guidelines development and other Agency programs, such as the Chesapeake Bay microlayer sampling, the National Sewage Sludge Survey, biomonitoring and bioaccumulation methods and sampling analyses, stormwater surveys, and toxicity

reduction evaluation studies for permitting and enforcement activities. The program also published the "List of Lists," which presented an integrated and up-to-date list of Agency-wide pollutants of concern and identified those for which analytical methods are available.

WATER QUALITY
Grants Assistance Program

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| PROGRAM | | | | | |
| Clean Lakes Program | | | | | |
| Abatement Control and Compliance | $8,747.7 | $7,583.0 | $7,583.0 | | -$7,583.0 |
| TOTAL | $8,747.7 | $7,583.0 | $7,583.0 | | -$7,583.0 |
| Control Agency Resource Supplementation (Section 106) | | | | | |
| Abatement Control and Compliance | $71,902.9 | $81,700.0 | $81,700.0 | $81,700.0 | 0.0 |
| TOTAL | $71,902.9 | $81,700.0 | $81,700.0 | $81,700.0 | 0.0 |
| TOTAL: | | | | | |
| Abatement Control and Compliance | $80,650.6 | $89,283.0 | $89,283.0 | $81,700.0 | -$7,583.0 |
| Grants Assistance Programs TOTAL | $80,650.6 | $89,283.0 | $89,283.0 | $81,700.0 | -$7,583.0 |

## Grants Assistance Programs

### Budget Request

The Agency requests a total of $81,700,000 for 1992, all of which will be for the Abatement, Control and Compliance appropriation. This represents a decrease of $7,583,000 from 1991.

### CLEAN LAKES PROGRAM

#### 1992 Program Request

In 1992, the Agency requests no funding for this program, which represents a decrease of $7,583,000 in the Abatement, Control and Compliance appropriation. In past years, the Agency has developed and demonstrated lake restoration techniques and assisted states in classifying lakes, identified techniques for restoring the levels of water quality needed to maintain or enhance uses, and implemented cleanup and control projects. Because the Agency has provided guidance to the states on maintaining clean lakes, it believes that the states are now able to address lake restoration needs, along with other local priorities, under their existing water quality management programs.

#### 1991 Program

The Agency is allocating $7,583,000 for this program in 1991 from the Abatement, Control and Compliance appropriation.

The Clean Lakes program supports state-EPA cooperative agreements under Section 314 of the Clean Water Act. The agreements are being used to support the highest priority Phase I lake diagnostic feasibility studies, Phase II implementation activities to restore and protect lake water quality and Phase III post-restoration monitoring projects to enhance the scientific basis for various lake restoration methodologies. Projects are being selected based on an evaluation of the environmental and public benefits of state Clean Lakes proposals.

Congressional Directives. A total of $7,083,000 is for the Congressionally directed projects for Nationally Competitive Clean Lakes Program and the Lake Alcyon, New Jersey Clean Lakes Demonstration Project.

#### 1990 Accomplishments

In 1990, the Agency obligated a total of $8,747,700 for this program, all of which was from the Abatement, Control and Compliance appropriation, to support state-EPA cooperative agreements under Section 314 of the Clean Water Act. The agreements were used to support the highest priority Phase I lake diagnostic feasibility studies, Phase II implementation activities to restore and protect lake water quality and Phase III post-restoration monitoring projects to enhance the scientific basis for various lake restoration methodologies. Projects were selected based on an evaluation of the environmental and public benefits of state Clean Lakes proposals.

## CONTROL AGENCY RESOURCE SUPPLEMENTATION (SECT. 106)

### 1992 Program Request

The Agency requests a total of $81,700,000 for the Abatement, Control and Compliance appropriation. This represents no change in the Abatement, Control and Compliance Appropriation.

Section 106 grants will continue to provide funding assistance for water pollution control programs operated by 63 state, interstate and territorial agencies and approximately 30 Indian tribes. Grantees will assess water quality conditions and trends and conduct comprehensive monitoring (including water column, fish tissue and sediment) to identify sites impacted by toxic and other pollutants and areas needing controls on a high priority basis. Grantees will continue to administer water quality standards programs that focus on adopting standards to protect aquatic ecosystems, and on completing adoption of numeric standards for toxic pollutants based on EPA water quality criteria and review of standards, as required by the statute.

States (and Indian tribes that qualify as states) will emphasize reissuance of expiring National Pollutant Discharge Elimination System (NPDES) permits that incorporate toxic/toxicity-based limits and will modify other permits to incorporate new limits based on the findings from earlier analyses. Grantees will also focus on selected, high priority permit modifications for publicly owned treatment works (POTWs) to address pretreatment requirements. States will develop and implement comprehensive Ground-Water Protection Programs which will serve as state-level mechanisms to integrate Federal ground-water activities. Through comprehensive programs, states will thoroughly assess their ground-water resources, evaluate or rank the highest risk contaminants and establish priorities and approaches to ground-water protection.

States (and Indian tribes that qualify as states) will devote resources to geographically targeted watersheds. Priority watersheds and activities will be identified and states will select and implement the appropriate mix of control strategies, including, but not limited to, nonpoint source (NPS) best management practices (BMPs), and permits for industrial and municipal stormwater discharges and combined sewer overflows.

### 1991 Program

In 1991, the Agency is allocating a total of $81,700,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

Section 106 grants provide funding assistance for water pollution control programs operated by 63 state, interstate and territorial agencies and approximately 30 Indian tribes. Grantees are completing implementation of Section 304(l) water quality-based controls for toxic discharges in high priority waters, assessing water quality conditions and trends and conducting comprehensive monitoring (including water column, fish tissue and sediment) to identify sites impacted by toxic pollutants and areas needing controls on a high priority basis. Grantees are administering water quality standards programs that focus on new standards for toxic pollutants based on EPA water quality criteria and review of standards, as required by the statute.

States (and Indian tribes that qualify as states) are emphasizing reissuance of expiring National Pollutant Discharge Elimination System (NPDES) permits that incorporate toxic/toxicity-based limits and modifying other permits to incorporate new limits based on the findings from earlier analyses. Grantees are also focusing on selected, high priority permit modifications for publicly owned treatment works (POTWs) to address pretreatment requirements. Grantees are focusing permitting, compliance and enforcement activities in waters at highest risk, particularly in critical aquatic habitats.

States (and Indian tribes that qualify as states) are developing and implementing ground-water protection activities that move the states beyond protection strategies to comprehensive ground-water protection programs. States are also enhancing their efforts to incorporate wellhead protection activities and pesticide management plans into their comprehensive ground-water protection programs.

1990 Accomplishments

In 1990, the Agency obligated a total of $71,902,900 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Section 106 grants provided funding assistance for water pollution control programs operated by 63 state, interstate and territorial agencies and approximately 30 Indian tribes. In 1990, states reviewed water quality standards and adopted numeric and/or narrative water quality standards for toxic pollutants and toxicity, as appropriate. States determined whether "new" or additional waters needed to be listed under Section 304(l), and completed assessments for rivers, lakes, estuaries, wetlands and marine waters. Monitoring and assessment data were used to establish priorities for needed control measures, to develop wasteload allocations for permits and to increase sediment contamination information.

States modified, issued or reissued NPDES permits to incorporate limits for toxic pollutants and/or toxicity in water quality-based or technology-based permits. States also issued permits for combined sewer overflows and sludge controls, where needed. States were encouraged to assume pretreatment program delegations, improve reporting where the state is the POTW control authority, to inspect POTWs to determine compliance status and to initiate enforcement actions against inadequate POTW implementation and/or industrial user noncompliance.

To ensure compliance of NPDES-permitted facilities, states continued an effective assessment, monitoring and enforcement program, focusing on controlling toxic pollutants and protecting municipal infrastructure. Industrial enforcement actions and NPDES and pretreatment inspections included toxicity reduction evaluation methodologies. National Municipal Policy follow-up enforcement actions focused on municipalities that failed to meet their construction schedules.

Ground-water protection activities received a total of $10,885,485 for support of state efforts to develop comprehensive ground-water protection programs. These programs set priorities and integrated efforts to manage and control actual and potential sources of contamination. As part of their

programs, state water agencies developed hydrogeologic aspects of pesticides management plans, which provide protection methods tailored to area-specific differences in ground-water vulnerability. In addition, state wellhead protection (WHP) programs were developed as key components of state comprehensive ground-water protection programs. In developing and implementing WHP programs, states played an active role in protecting a very important subset of their ground-water resources (i.e., ground waters that supply drinking water to public water systems).

## WATER QUALITY
### Water Quality Strategies Implementation

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Wetlands Protection | | | | | |
| Salaries & Expenses | $5,779.6 | $7,900.1 | $7,899.8 | $9,825.0 | $1,925.2 |
| Abatement Control and Compliance | $3,375.7 | $5,938.0 | $5,938.0 | $6,413.0 | $475.0 |
| TOTAL | $9,155.3 | $13,838.1 | $13,837.8 | $16,238.0 | $2,400.2 |
| NonPoint Source Grants | | | | | |
| Abatement Control and Compliance | $36,804.1 | $48,450.0 | $48,450.0 | $23,750.0 | -$24,700.0 |
| TOTAL | $36,804.1 | $48,450.0 | $48,450.0 | $23,750.0 | -$24,700.0 |
| Wetlands Program Implementation - Grants | | | | | |
| Abatement Control and Compliance | $1,215.0 | $5,000.0 | $5,000.0 | $8,500.0 | $3,500.0 |
| TOTAL | $1,215.0 | $5,000.0 | $5,000.0 | $8,500.0 | $3,500.0 |
| Oil Spills Program | | | | | |
| Salaries & Expenses | $467.4 | | | | 0.0 |
| Abatement Control and Compliance | $42.8 | | | $300.0 | $300.0 |
| TOTAL | $510.2 | | | $300.0 | $300.0 |
| Nonpoint Source Implementation | | | | | |
| Abatement Control and Compliance | $831.3 | $2,550.0 | $2,550.0 | $1,250.0 | -$1,300.0 |
| TOTAL | $831.3 | $2,550.0 | $2,550.0 | $1,250.0 | -$1,300.0 |
| Ocean Disposal Permits | | | | | |
| Salaries & Expenses | $2,521.2 | $2,709.0 | $2,708.9 | $2,726.3 | $17.4 |
| Abatement Control and Compliance | $7,431.3 | $7,406.9 | $7,406.9 | $5,456.9 | -$1,950.0 |
| Ocean Dumping Act | $1,365.9 | $1,314.0 | $1,314.0 | | -$1,314.0 |
| TOTAL | $11,318.4 | $11,429.9 | $11,429.8 | $8,183.2 | -$3,246.6 |
| Environmental Emergency Response & Prevention | | | | | |
| Salaries & Expenses | $1,675.4 | $2,289.1 | $2,289.0 | $3,855.7 | $1,566.7 |
| Abatement Control and Compliance | $1,944.3 | $4,682.8 | $4,682.8 | $10,982.8 | $6,300.0 |
| TOTAL | $3,619.7 | $6,971.9 | $6,971.8 | $14,838.5 | $7,866.7 |
| Standards & Regulations | | | | | |
| Salaries & Expenses | $4,741.3 | $5,266.1 | $5,265.9 | $6,218.6 | $952.7 |
| Abatement Control and Compliance | $3,819.3 | $4,341.9 | $4,341.9 | $7,541.9 | $3,200.0 |
| TOTAL | $8,560.6 | $9,608.0 | $9,607.8 | $13,760.5 | $4,152.7 |

## WATER QUALITY
### Water Quality Strategies Implementation

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| TOTAL: | | | | | |
| Salaries & Expenses | $15,184.9 | $18,164.3 | $18,163.6 | $22,625.6 | $4,462.0 |
| Abatement Control and Compliance | $55,463.8 | $78,369.6 | $78,369.6 | $64,194.6 | -$14,175.0 |
| Ocean Dumping Act | $1,365.9 | $1,314.0 | $1,314.0 | | -$1,314.0 |
| Water Quality Strategies Implementation TOTAL | $72,014.6 | $97,847.9 | $97,847.2 | $86,820.2 | -$11,027.0 |
| PERMANENT WORKYEARS | | | | | |
| Wetlands Protection | 105.1 | 155.2 | 155.2 | 178.9 | 23.7 |
| Oil Spills Program | 5.4 | | | | 0.0 |
| Ocean Disposal Permits | 44.8 | 57.7 | 57.7 | 60.3 | 2.6 |
| Environmental Emergency Response & Prevention | 31.9 | 43.9 | 43.9 | 64.8 | 20.9 |
| Standards & Regulations | 85.9 | 95.5 | 95.5 | 106.0 | 10.5 |
| TOTAL PERMANENT WORKYEARS | 273.1 | 352.3 | 352.3 | 410.0 | 57.7 |
| TOTAL WORKYEARS | | | | | |
| Wetlands Protection | 110.5 | 160.9 | 160.9 | 178.9 | 18.0 |
| Oil Spills Program | 6.4 | | | | 0.0 |
| Ocean Disposal Permits | 46.7 | 60.3 | 60.3 | 60.3 | 0.0 |
| Environmental Emergency Response & Prevention | 35.3 | 46.8 | 46.8 | 64.8 | 18.0 |
| Standards & Regulations | 87.9 | 98.0 | 98.0 | 106.0 | 8.0 |
| TOTAL WORKYEARS | 286.8 | 366.0 | 366.0 | 410.0 | 44.0 |

## WATER QUALITY

### Water Quality Strategies Implementation

Budget Request

The Agency requests a total of $86,820,200 supported by 410.0 total workyears for 1992, a decrease of $11,027,000 and an increase of 44.0 total workyears from 1991. Of the request, $22,625,600 will be from the Salaries and Expenses appropriation and $64,194,600 will be from the Abatement, Control and Compliance appropriation. This represents an increase of $4,462,000 in the Salaries and Expenses appropriation and a decrease of $14,175,000 in the Abatement, Control and Compliance appropriation.

WETLANDS PROTECTION

1992 Program Request

The Agency requests a total of $16,238,000 supported by 178.9 total workyears for this program, of which $9,825,000 will be for the Salaries and Expenses appropriation and $6,413,000 will be for the Abatement, Control and Compliance appropriation. This represents increases of $1,925,200 and $475,000, respectively, and an increase of 18.0 total workyears. The increases reflect the Agency's support for achieving the President's goal of no net loss of wetlands and several other major Presidential initiatives: state capacity, enforcement, and protection of critical habitats.

In 1992, the Agency will support the President's Ecology Initiative and continue to work toward the President's goal of no net loss of wetlands, the new Presidential Executive Order on Wetlands Protection, comprehensive planning for Federal land management agencies, and increased compliance monitoring and enforcement. The program will continue its efforts under the Section 404 regulatory program, particularly in addressing inconsistencies with the Army Corps of Engineers or other programs.

A major program activity during 1992 will be working with other water programs and the Office of Research and Development, as well as other appropriate Federal agencies, to implement a geographically targeted watershed management approach to the protection/maintenance of water quality and preservation of wetland values and functions. The integrated implementation of point and nonpoint source controls, including wetlands protection, can greatly enhance the prevention of pollution and the reduction of risks to public health and the environment. The program will work to ensure that in watersheds targeted for special emphasis such activities as advance identification and targeted Section 404 enforcement actions, coupled with education/outreach programs, are undertaken. Regional staff will continue their review of Section 404 public notices, field inspections, and enforcement actions, and will work with the affected regulated communities to inform them about the Section 404 program.

The Agency will also link its wetlands protection activities with reforestation efforts to assist in achieving the President's goals of no net loss of wetlands and reforestation. The restoration of forested wetlands adjacent to

streams and other water bodies, including bottomland hardwood forested wetlands, is one of the most effective methods of protecting water quality while restoring wetlands and protecting critical habitats. Forested wetlands act as buffers between development and the water, absorbing the nonpoint source impacts of development before they reach the water body. They assist in controlling floods, erosion of sediments, both point and nonpoint sources of pollution and provide habitat for fish, wildlife, and food chain production.

Another major program activity for 1992 will be the development and use of ecological indicators to measure the quality (i.e., ecological "health") of the wetland resources and the reduction of risk to public health and the environment. The program will begin to identify and collect data on key wetland indicators that track the status, health and trends of wetlands and efforts to achieve the no net loss goal, in conjunction with other EPA programs and Federal and state agencies. The program will also initiate efforts to correlate the status and health of wetlands to water quality and other ecological indicators. The number of state wetlands pilot projects focusing on state water quality standards will be expanded, with assistance of the wetlands state grants program.

1991 Program

The Agency is allocating a total of $13,837,800 supported by 160.9 total workyears for this program, of which $7,899,800 is from the Salaries and Expenses appropriation and $5,938,000 is from the Abatement, Control and Compliance Appropriation.

The Agency continues to work toward the President's goal of no net loss of wetlands through the support of the evolving Administration initiatives for wetlands protection, a stronger Section 404 program, and assisting states to develop effective wetlands protection programs.

A major component of a stronger Section 404 program is the enhanced field presence of the Agency and an increasingly cooperative working relationship with the Army Corps of Engineers. The program continues to implement the memoranda of agreement (MOAs) with the Corps on mitigation policy, enforcement, and delineation of jurisdictional wetlands. EPA is monitoring restoration activities occurring under the mitigation MOA. Section 404 enforcement activities are augmented by an aggressive public outreach/media campaign to inform the public and the regulated community of the values and functions of wetlands and the consequences of their destruction or degradation. The wetlands program is being coordinated 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. These efforts are ensuring that wetlands, rivers, lakes and coastal/marine waters are subject to the same standards and equal levels of protection.

Increased funding assistance is being provided to states to encourage state program assumption, development of state comprehensive wetlands protection plans, and other state activities to promote wetlands protection, including use of the Section 401 water quality certification process and development of state water quality standards for wetlands. EPA continues to assist in the development of local programs through the Regions and states and the use of information/technology transfer. Continued focus is being placed upon anticipatory approaches to wetlands protection, including advance identification.

The Agency is implementing a variety of projects aimed at protecting special wetland ecosystems such as coastal Louisiana and western riparian wetlands.

The Agency, working with other Federal and state agencies, is launching an education/technical assistance program aimed at abating the high loss of wetlands through agricultural uses. Since EPA has limited regulatory powers in this area, forming partnerships with others is a key to success. EPA is disseminating new technical tools emerging from the Agency's research efforts in the areas of restoration, cumulative impact assessments, and long term monitoring of wetlands "health." EPA is playing an increasing role in international activities, seeking opportunities to share U.S. experience and expertise with others, especially developing countries.

Congressional Directives. A total of $525,000 is for Congressionally directed projects for protecting the Canaan Valley, West Virginia, wetlands complex and supporting the Lake Pontchartrain wetlands creation demonstration project.

1990 Accomplishments

In 1990, the Agency obligated a total of $9,155,300 supported by 110.5 total workyears for this program, of which $5,779,600 was from the Salaries and Expenses appropriation and $3,375,700 was from the Abatement, Control and Compliance appropriation.

In 1990, the Agency continued to work with the Corps of Engineers and other Federal agencies in developing policies and procedures to clarify or amplify regulatory requirements of the Section 404 program. The Agency supported the work of the White House/Domestic Policy Council's Task Force on Wetlands to develop Administration policy on wetlands. The Agency worked with other Federal agencies on a variety of Federal wetlands protection issues including streamlining the Section 404 regulatory process, improving Federal land management practices, and strengthening the knowledge and science of wetlands. In particular, EPA participated on 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 included more intensive efforts aimed at state wetlands protection programs, the use of anticipatory approaches for wetlands protection, and aggressive enforcement activities. State interest in wetlands protection activities increased due to increased public knowledge of the importance of wetlands and the availability of a modest amount of "seed" grant funding for pilot state programs. The Agency held training workshops involving state personnel on Section 404 regulations and enforcement, the delineation methodology, water demand management, and use of planning/negotiation techniques. The Agency worked with states as they revised their 401 water quality certification processes to reflect wetlands values and functions. The program issued final regulations so that qualified and approved Indian Tribes may administer the Section 404 program.

The Agency continued its use of anticipatory approaches for wetlands protection, particularly in areas where loss rates continue to be unacceptably high and traditional program tools did not satisfactorily address the problem.

Enforcement activities expanded in 1990, building upon new directions and experience gained under a new enforcement memorandum of agreement with the Army, new guidance on the use of administrative civil penalties, an expanding EPA criminal enforcement program, and greater field experience. The use of administrative penalty orders increased commensurate with these enhancements.

In 1990, the program worked with the Marine and Estuarine Protection Program to develop improved test methods and procedural guidance on sediment criteria and disposal of dredged material in coastal waters. The criteria and guidance should apply equally to material disposed of in wetlands, rivers, lakes and coastal/marine waters.

## WETLANDS IMPLEMENTATION PROGRAM

### 1992 Program Request

The Agency requests a total of $8,500,000 for this program, all of which will be from the Abatement, Control and Compliance appropriation. This represents an increase of $3,500,000. The increase supports the Agency's commitment to achieving the President's goals of no net loss of wetlands and enhancing States' wetlands protection capacity.

Increasing the roles and responsibilities of state governments and Indian Tribes in wetlands protection is a crucial component of the national effort to achieve the President's goal of "no net loss" of wetlands. States and Indian tribes continue to need assistance as they initiate new wetlands protection projects. These resources will facilitate initiation of activities supporting the President's goal of no net loss of wetlands, including examination of the feasibility of assuming the administration of the Section 404 program.

States will use Federal financial assistance to further national wetlands protection efforts in a variety of ways, including developing water quality standards for wetlands, incorporating wetlands into the Section 401 state water quality certification process, developing comprehensive statewide or geographically targeted wetlands protection management plans, and working with local governments and citizen groups to promote wetlands protection efforts. In 1992, the Agency will fund additional innovative wetlands protection programs, and will assist states in more technically demanding projects such as the evaluation of a state's wetlands values and functions. Projects that integrate state, local and private sector programs and activities and that focus on geographically targeted problem areas will be a high priority. EPA will explore innovative techniques such as those combining economic development with wetlands/habitat protection.

### 1991 Program

The Agency is allocating a total of $5,000,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

The wetlands implementation program is providing grant assistance to states and Indian Tribes for research, investigations, experiments, training, demonstrations, surveys, and studies for the protection of wetlands from pollution under Section 104 of the Clean Water Act. Grant assistance is allowing

many states and Indian Tribes to acquire basic information and data on their wetlands resources and the risks posed to these resources, examine a wide variety of techniques for protection for these critical resources, and develop comprehensive wetlands protection plans that may combine watershed, nonpoint source, river corridor, estuary/coastal management and other critical habitat protection initiatives. States are undertaking aggressive public outreach/education campaigns in concert with local government planning and protection measures.

1990 Accomplishments

In 1990, the Agency obligated a total of $1,215,000 for this program, all of which was from the Abatement, Control and Compliance appropriation.

During 1990, grants were made available to 21 states, one local government entity, and one Indian Tribe under a wetlands implementation program for the first time. The majority of the projects focused on state comprehensive wetlands protection planning/management and the use of the Section 401 process. In 1989 and in previous years, the Agency's wetlands protection program had provided small amounts of "seed" money to a limited number of states and one Indian Tribe to examine the feasibility of assuming administration of the Section 404 program. The State of Michigan is the only state that has assumed the program, which in other states is jointly administered by the Corps of Engineers and EPA. Examples of the ways in which states used this financial assistance to enhance their wetlands protection efforts included: evaluation of existing statutory and regulatory programs; development of narrative water quality standards for wetlands; incorporation of wetlands protection in the Section 401 water quality certification process; and identification of wetland resources, their functions, and priorities.

OCEAN DISPOSAL PERMITS

1992 Program Request

The Agency requests a total of $8,183,200 supported by 60.3 total workyears for this program, of which $2,726,300 will be for the Salaries and Expenses appropriation and $5,456,900 will be for the Abatement, Control and Compliance appropriation. The Agency also expects to receive $1,314,000 from the Ocean Dumping Revolving Fund. Of the total workyears, 50.3 will be supported by the the Salaries and Expenses appropriation and 10.0 will be supported by the ODRF. This represents a decrease of $1,000,000 in Abatement, Control and Compliance, an increase $17,400 in Salaries and Expenses, and no change in total workyears from 1991. The decrease in Abatement, Control and Compliance reflects completion of the more intensive phases of a study of a San Francisco Bay area ocean disposal site and completion of the New York Bight Restoration Plan. The increase in the Salaries and Expenses appropriation reflects increased personnel costs.

Headquarters and Regions will continue site management, monitoring, surveillance, and monitoring of compliance with enforcement agreements required under the Ocean Dumping Ban Act (ODBA) of 1988. This will include continued surveillance of the 106 Mile Site (deepwater municipal sludge dump site) in coordination with the National Oceanic and Atmospheric Administration (NOAA) and

the U.S. Coast Guard (USCG). The Agency will continue its development of revisions to the ocean dumping regulations for dredged material and will continue work on ocean dumping regulations for other types of materials. Headquarters will continue work to control marine debris through identification of sources and the development of reduction and control strategies. Region II will continue monitoring of nearshore waters to address the continuing problems on the New York-New Jersey beaches. The Regions will continue to develop environmental impact statements (EIS) for selected ocean dredged material disposal sites and will continue site management and monitoring of designated disposal sites. Region II will continue work on designating a replacement Mud Dump Site. The Agency will continue to participate in activities under the London Dumping Convention, the International Convention for the Prevention of Pollution from Ships (MARPOL), and the Cartagena Convention to preserve the coastal and marine environments.

1991 Program

The Agency is allocating a total $11,429,800 supported by 60.3 total workyears for this program, of which $2,708,900 is from the Salaries and Expenses appropriation, $7,406,900 is from the Abatement, Control and Compliance appropriation, and $1,314,000 is from the ODRF. Of the total workyears, 50.3 are supported by the the Salaries and Expenses appropriation and 10.0 are supported by the ODRF.

The Agency is planning to propose revised Ocean Dumping (OD) regulations on dredged material disposal and is initiating work on a proposal for regulations on disposal of other types of materials. The Regional role in disposal site management and monitoring is expanded to ensure compliance and enforcement of ocean dumping criteria and permit requirements. Additional support for Region II is continuing for monitoring of nearshore waters to address the continuing problems on the New York-New Jersey beaches. Region II is completing the New York Bight Restoration Plan; is completing a report on the feasibility of designating an alternative 20-mile site to the Mud Dump Site; and, in cooperation with the U.S. Army Corps of Engineers (COE), is completing a plan for the long-term management of dredged material from the New York/New Jersey Harbor region. Headquarters and Region II continue implementing expanded management, monitoring, and surveillance of the 106 Mile Site in coordination with NOAA and the USCG.

The Regions are continuing their role in the development of environmental impact statements (EIS) for ocean dredged material disposal sites, and in site management and monitoring as more interim dredged material disposal sites are designated as final sites. The Agency, in cooperation with other Federal agencies, 1) is beginning to develop a compliance and enforcement improvement initiative to reduce risk to human health and aquatic life; 2) is working (in cooperation with the COE) to develop improved procedures for identifying illegal ocean dumping of dredge materials; and 3) is working (with NOAA and USCG) on improving surveillance.

Congressional Directives. A total of $500,000 is for the Congressionally directed study of a San Francisco Bay area ocean disposal site for dredged materials.

1990 Accomplishments

The Agency obligated a total of $11,318,400 supported by 46.7 total workyears for this program, of which $2,521,200 was from the Salaries and Expenses appropriation, $7,431,300 was from the Abatement, Control and Compliance appropriation, and $1,365,900 was from the ODRF.

The Agency continued development of revised OD regulations to respond to statutory and judicial requirements. Headquarters continued work on developing sediment testing protocols and a comprehensive, risk-based management strategy to bring the Marine Protection Research and Sanctuaries Act Section 103 program and the Clean Water Act Section 404 program into harmony. In addition, Headquarters developed a compliance and enforcement strategy for the OD program. Region II continued to develop the New York Bight Restoration Plan and, in cooperation with EPA Headquarters, USCG and NOAA, developed and began implementing an expanded monitoring plan for the 106 Mile Site and related other sites, as required by ODBA. The Agency participated in international efforts to preserve the coastal and marine environments through activities under the London Dumping Convention and other international agreements.

OIL SPILLS PROGRAM

1992 Program Request

The Agency requests a total of $300,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of $300,000 in Abatement, Control and Compliance. The increase in Abatement, Control and Compliance reflects increased Agency participation in the development of a restoration plan for the areas impacted by the Exxon Valdez oil spill.

The Agency, through the Alaska Restoration Task Force Office, supports activities to develop and implement a restoration plan of the Trustee Agencies -- the Departments of Agriculture, Commerce, and the Interior -- for the areas impacted by the Exxon Valdez oil spill. The Agency will provide technical assistance and expertise to designated task forces, and to the Trustee Agencies in the development of a restoration plan, a review of damage assessment data, and identification of data needs.

1991 Program

The Agency did not request resources for this program in 1991, but continues to support this effort through its base program..

1990 Accomplishments

In 1990, the Agency obligated a total of $510,200 supported by 6.4 total workyears for this program, of which $467,400 was from the Salaries and Expenses appropriation and $42,800 was from the Abatement, Control and Compliance appropriation. The Agency provided support to the State of Alaska in assessing contamination and clean-up activities, and assisted the Trustee Agencies in developing and implementing sampling and monitoring programs, developing

monitoring protocols for toxic pollutant investigations, and reviewing workplans and water quality data.

## ENVIRONMENTAL EMERGENCY RESPONSE AND PREVENTION

### 1992 Program Request

The Agency requests a total of $14,838,500 supported by 64.8 total workyears for this program of which $3,855,700 will be for the Salaries and Expenses appropriation and $10,982,800 will be for the Abatement, Control and Compliance appropriation. This reflects an increase of $6,300,000 to Abatement, Control and Compliance, an increase of $1,566,700 in Salaries and Expenses, and an increase of 18.0 workyears from 1991. The increase is requested to fund the Federal workforce needed to implement the President's program in 1992.

In 1992, resources will support implementation of the Oil Pollution Act of 1990 (OPA). Revisions to Subparts D and J, "Response and Dispersants", of the National Contingency Plan (NCP) will be finalized. The NCP will also include requirements for area contingency plans and how areas were designated. Based on the efforts of the Area Contingency Plan Workgroup begun in 1991, preparation of area contingency plans will be written and approved. These plans, when implemented in conjunction with the NCP, shall be adequate to remove a worst case discharge, and to prevent or mitigate a substantial threat of such a discharge. In the spring, the Agency will also finalize revisions to the Spill Prevention, Countermeasure and Control (SPCC) regulations Phase II amendments, which include facility response plans. The Regions will begin to review and approve facility response plans submitted by the regulated industry.

The OPA introduces new federal enforcement language which authorizes the use of penalties against violators of the law. In 1992, the regional enforcement component of the program will effectively begin to implement these new authorities by bringing administrative actions against facilities for failure to comply with SPCC and enforcement response plans. Headquarters will develop guidance for enforcement strategies.

The program will provide national management and oversight of oil spill response activities to ensure that Regions adhere to program policy and conduct technically adequate, cost-effective responses. The Agency will support field operations through operational guidance, technical bulletins and demonstrations of response technologies.

The Agency will remain on a 24-hour alert to receive notifications of accidental releases of oil and other petroleum products. EPA will direct or monitor removals at major inland oil incidents. Additionally, it will provide technical assistance to the U.S. Coast Guard on coastal oil spills when the Emergency Response Team (ERT) is activated or when the U.S. Coast Guard makes a specific request. Funding for response actions will continue to be provided on a reimbursable basis from permanent indefinite appropriations in the Department of Transportation. Response actions will be defined in a Memorandum of Understanding (MOU) between the Coast Guard and EPA.

1991 Program

In 1991, the Agency is allocating a total of $6,971,800 supported by 46.8 total workyears for this program, of which $2,289,000 is from the Salaries and Expenses appropriation and $4,682,800 is from the Abatement, Control and Compliance appropriation.

In 1991, the Agency is beginning implementation of the Oil Pollution Act of 1990. The Agency is working closely with the U.S. Coast Guard on drafting the Executive Order that sets forth the responsibilities for Federal Agencies implementing the Act. Several workgroups have been formed to implement EPA's responsibilities: the NCP, including Subparts D and J (Response and Dispersants), Enforcement, Contingency Plans/Area Designation and SPCC/Response Plans. Revisions to Subparts D and J of the NCP are expected to be proposed in the fall. The Area Contingency Plan workgroup is designating areas for which contingency plans are needed and beginning preparation of those plans. Areas that are designated are to be published in a notice in the Federal Register. The Enforcement Workgroup is preparing a Memorandum of Understanding with the U.S. Coast Guard which will cover penalties for releases and actions for non-compliance. The Agency is issuing enforcement guidances including a penalty matrix. The Phase I amendments of the SPCC regulations, which do not address the new legislation, are to be proposed in the spring. Based on the recommendations of the Oil Spill Prevention, Control and Countermeasures Program Task Force, these amendments will make mandatory many aspects of the regulations. The SPCC/Response Plan workgroup is initiating work on the Phase II amendments of the SPCC regulations, which will include facility response plans. A limited number of facility response plans will be reviewed and approved by EPA at facilities that pose substantial and significant threat to the environment. The Regions will conduct 500 SPCC inspections. In 1991, Phase II amendments are expected to be proposed in the fall of 1991. Guidances for regulated industry and Regional programs are being developed.

In addition, the Agency handles and monitors oil spill notifications and directs or monitors on-scene removal activities of Potentially Responsible Parties or state and local authorities at major spills. Moreover, the Agency 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. The Environmental Response Team provides support during field chemical safety audits and at major oil spills where expertise is needed.

1990 Accomplishments

In 1990, the Agency obligated $3,619,700 supported by 35.3 total workyears for this program, of which $1,944,300 was from Abatement, Control and Compliance and $1,675,400 was from the Salaries and Expenses appropriation.

The program received and screened a total of 8,958 notifications of oil spill releases, conducted 805 SPCC inspections, performed on-scene monitoring of 154 oil spills, conducted 40 oil spill responses, and investigated 98 oil releases. The Agency continued revising Phase I of the SPCC regulations.

In August, the Oil Pollution Act was signed. The Agency formed an Implementation Workgroup to begin assessing its responsibilities under the legislation and timeframes in which to accomplish them.

## STANDARDS AND REGULATIONS

### 1992 Program Request

The Agency requests a total of $13,760,500 supported by 106.0 total workyears for this program, of which $6,218,600 will be for the Salaries and Expenses appropriation and $7,541,900 will be for the Abatement, Control and Compliance appropriation. This reflects increases of $952,700 in the Salaries and Expenses appropriation, $3,200,000 in the Abatement, Control and Compliance appropriation and 8.0 total workyears. The increases will support the initial steps toward a comprehensive scientific basis on which states will adopt water quality standards that address the ecological integrity of surface water. These steps will include work in the area of biological criteria, sediment criteria, and wildlife criteria values.

In 1992, the program will develop criteria and standards that will enable the state and federal water quality community to factor ecological risks into water quality decision-making, to develop ecologically-based standards, and to evaluate the effectiveness of control programs. Ecological criteria provide the basis of state standards that address the water environment holistically--considering the sum total of the complex biological, chemical and physical dynamics necessary to sustain the ecological integrity of a healthy aquatic ecosystem. State ecological standards will provide a comprehensive scientific basis on which to design programs that prevent and control pollution and habitat destruction, particularly from nonpoint sources, combined sewer overflows, and stormwater runoff.

The program will publish biological technical guidance for states to use in adopting water quality standards that protect the structure, function and habitat requirements of rivers, lakes, estuaries and wetlands. Headquarters will continue publication of *in situ* organic and metal sediment quality criteria protective of aquatic life, guidance on identifying and managing contaminated sediments, and the development of a methodology for criteria protective of human health. The program will develop aquatic life and wildlife criteria for those pollutants that bioaccumulate through the food chain, thus posing high risks to aquatic life in the water and to wildlife, endangered species and migratory birds using water and wetlands. The program will conduct training seminars and, where appropriate, provide on-site technical support to help states target water quality standards reviews based on ecological risks, use comprehensive ecological risk assessments in developing standards, and adopt standards protective of the chemical, physical, and biological integrity of critical waters. Training for Indian tribes qualifying as states for the water quality standards program will be integrated with state training programs.

The program will promulgate the first round of regulations for the use and disposal of sewage sludge, and will develop and distribute to Regional and state permit writers and to local governments the technical support materials to assist them in understanding and effectively implementing the rule. In addition, the program will provide workshops and training materials to assist in the design and

implementation of programs that beneficially reuse sewage sludge. The program will complete the collection, analysis and evaluation of data as initial steps in developing numeric criteria for a limited number of round two pollutants.

1991 Program

In 1991, the Agency is allocating a total of $9,607,800 supported by 98.0 total workyears for this program, of which $5,265,900 is from the Salaries and Expenses appropriation and $4,341,900 is from the Abatement, Control and Compliance appropriation.

The program is addressing pressing needs for scientifically sound technical guidance and support to enable state adoption of ecologically protective water quality standards. The program consists of: issuing initial technical guidance on biological criteria for streams; publishing sediment criteria for organic contaminants and a methodology for calculating sediment criteria for metal contaminants; publishing salt and fresh water aquatic life criteria and issuing revisions to the regulations governing water quality standards for Indian tribes; and proposing regulation revisions to reflect statutory requirements for toxic pollutants.

The program is working with the 41 states and territories that failed to comply with the deadline in section 303(c)(2)(B) of the CWA for adopting numeric toxic standards, and is preparing promulgation actions for those states that remain out of compliance. In addition, as states initiate the seventh triennial water quality standards reviews, Regions are working with states to revise state water quality standards to meet the priorities for the states' 1991-1993 triennial standards reviews. The priorities include adoption of wetland water quality standards, narrative biological criteria, coastal/estuarine standards, salt water standards, where appropriate, and antidegradation implementation methods. Regions and Headquarters are providing on-site assistance and training enabling states and qualified Indian tribes to make more effective use of criteria and program guidance. Regions are continuing to review and approve state and Indian water quality standards, resolve issues and provide needed litigation support. Regions are assisting states in adopting salt and fresh water criteria for newly-identified toxic pollutants, in addressing bioaccumulation of toxic pollutants in fish flesh and in applying antidegradation implementation methods.

The program is completing the majority of the technical work to promulgate final first-round standards for the use and disposal of sewage sludge, scheduled for early 1992. The program is conducting analyses in response to comments on regulations proposed in 1989, and on additional data and information published in 1990. EPA is also conducting workshops and providing technical assistance to states and initiating data collection and analysis on additional pollutants, disposal practices and exposure pathways for second-round regulations.

1990 Accomplishments

In 1990, the Agency obligated a total of $8,560,600 supported by 87.9 total work years for this program, of which $4,741,300 was from the Salaries and Expenses appropriation and $3,819,300 was from the Abatement, Control and Compliance appropriation.

The program emphasized state adoption of numeric criteria for toxic pollutants. The Agency announced its intention to initiate promulgation actions for states not complying with Section 303(c)(2)(B) of the CWA.

Priority objectives for state water quality standards reviews during the 1991-1993 triennium were established, including state adoption of biological criteria, antidegradation policies and implementation methods, and water quality standards for wetlands and coastal/estuarine waters. The program issued national guidance on water quality standards, program guidance for biological criteria, and proposed water quality criteria for six pollutants to assist states in implementing the water quality standards program during the 1991-1993 triennium. Outreach programs provided information to the states on policies and requirements, interpretation and use of water quality criteria and advisories, and use of sediment and biological criteria.

EPA made continued progress toward final promulgation of standards for the use and disposal of sewage sludge. The program issued a notice of availability of information and data from the National Sewage Sludge Survey, and announced preliminary decisions on key issues affecting the final regulation. The program conducted additional sewage sludge modeling activities, evaluated proposed numerical criteria, and continued its response to public comments on the proposed technical regulations for use and disposal of sewage sludge.

## NONPOINT SOURCE MANAGEMENT GRANTS

### 1992 Program Request

The Agency requests $23,750,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents a decrease of $24,700,000 in the Abatement, Control and Compliance appropriation, which reflects a reduced, but continuing need for NPS implementation funds. The decrease is based on the fact that local government land use decisions and agricultural practices cause most NPS pollution. Furthermore, it is in appropriate for the Federal government to involve itself too heavily in these local responsibilities. The agency does not request additional funding for special NPS projects earmarked in the 1991 Congressional appropriation.

In 1992, EPA, based on careful analyses and oversight of updated state Section 319 management plans, will select state NPS implementation activities fully supporting EPA's Watershed Initiative, which focuses on critical watersheds. Selected state NPS projects will: 1) support integrated urban pollution programs in priority watersheds by enhancing section 319 programs addressing stormwater runoff not regulated by National Pollutant Discharge Elimination System (NPDES) permits; 2) support innovative state approaches to resolve NPS mining and forestry problems in priority watersheds; 3) assure performance, continuity, and self-sufficiency of NPS programs at the state level through hiring of staff and establishment of state-wide programs for education, technical assistance, and technology transfer; 4) support development of effective pollution prevention mechanisms to minimize generation of NPS pollution at the source, with emphasis on high priority watersheds; and, 5) expand and strengthen activities to build state capacities to protect ground water from NPS pollution.

EPA will ensure that all selected projects will: 1) protect/restore critical aquatic habitats; 2) establish linkages with state agricultural agencies and the President's Water Quality Initiative under the leadership of USDA; 3) protect, where needed, high quality waters; and, 4) support NPS needs identified in state Comprehensive Ground Water Protection Programs.

1991 Program

The Agency is allocating $48,450,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

EPA is directing these grant funds to states that effectively implement Best Management Practices (BMPs) that control particularly difficult or serious NPS pollution problems and/or use innovative methods or practices to prevent or control NPS pollution. Major sources of NPS pollution to be addressed include (1) agricultural practices that result in surface water contamination by soils, fertilizers, pesticides, and animal wastes; (2) resource extraction (mining/oil and gas) that cause serious water quality impacts; and (3) urban NPS pollution (contaminated urban runoff) that results in substantial loadings of toxic and conventional pollutants not controlled under the NPDES stormwater permit program.

EPA is selecting projects that focus on measures (regulatory and nonregulatory) to abate and prevent NPS pollution in targeted state watersheds, consistent with the objective of our Watershed Initiative. Activities selected for funding must achieve discrete, measurable results that will reduce risk to human health and the aquatic environment and advance states toward effective implementation of comprehensive NPS management programs.

Grants under section 319 are also being used for activities to build state institutional capabilities to protect ground-water resources from NPS pollution. Such activities include (1) ground-water resource assessments in areas where NPS pollution is a major concern; (2) development of BMPs to prevent ground-water contamination; (3) development of technical assistance documents and training efforts; (4) establishment of state and local regulatory and nonregulatory capabilities; (5) establishment of institutional responsibilities and coordination mechanisms; and (6) development of ground-water monitoring capability, including data management.

Congressional Directives. A total of $36,000,000 is for Congressionally directed projects, including Nonpoint Source Grants under Section 319 of the Clean Water Act, NPS management for the Illinois River Basin, NPS management for the Kansas, Nebraska and Iowa Region, and the Rouge River Basin NPS control demonstration.

1990 Accomplishments

In 1990, the Agency obligated a total of $36,804,100 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Nonpoint source management grants were made available to states and qualified Indian tribes to implement approved elements of their section 319 NPS management programs. EPA developed state-by-state planning targets for funding based on interim criteria that reflected nonpoint source needs; prepared guidance on the award and management of grants in accordance EPA's December 1987 NPS

Guidance; and awarded grants based on merit to fund NPS activities that result in demonstrated progress in achieving Congress' goal of preventing and abating NPS pollution. Priorities for funding included (1) evaluating the effectiveness of a state's performance to date; (2) balancing programs to provide for both improvement and protection of water quality in specific watersheds and institutionalization of long-term, statewide NPS management programs; (3) particular NPS activities of highest priority to the Agency (including those articulated in EPA's 1987 NPS Guidance); and (4) conducting appropriate before-and-after water quality monitoring and evaluation activities to enable EPA to report to Congress on its progress in reducing NPS pollution and improving water quality. Section 319 grants contained ground-water elements to further state assessment of ground-water resources and to establish a basis for identifying priority protection needs prior to undertaking any site-specific measures. If a state already had a good basis for determining its ground-water priorities, then the state was encouraged to implement efforts to address these priorities.

## NONPOINT SOURCE IMPLEMENTATION

### 1992 Program Request

The Agency requests a total of $1,250,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents a decrease of $1,300,000 in the Abatement, Control and Compliance appropriation from 1991.

Section 319(n) requires that "(n)ot less that 5 percent of the funds appropriated (under Section 319) for any fiscal year shall be available to the Administrator to maintain personnel levels at the Environmental Protection Agency at levels which are adequate to carry out (Section 319)...." Thus, EPA will use these funds to provide adequate staff to continue to support and oversee state 319 programs. These staff will assist in the award and management of NPS implementation funds to states under Section 319. EPA will continue to negotiate state work plans for projects consistent with the complex legal and procedural requirements associated with grants under Section 319, including program tracking and accounting requirements. EPA will also continue activities related to the approval of complete NPS management programs in each state and to oversee state implementation, which may include on-site reviews.

### 1991 Program

The Agency is allocating a total of $2,550,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

Section 319(n) requires that "(n)ot less that 5 percent of the funds appropriated (under Section 319) for any fiscal year shall be available to the Administrator to maintain personnel levels at the Environmental Protection Agency at levels which are adequate to carry out (Section 319)...." EPA is continuing to use these funds to provide adequate staff to oversee the award and management of funds to states under Section 319. EPA is negotiating state work plans for projects consistent with the complex legal and procedural requirements associated with grants under Section 319, including program tracking and accounting requirements. EPA is also continuing activities related to the approval of

complete NPS management programs in each state and the oversight of state implementation, which may include on-site reviews.

1990 Accomplishments

In 1990, the Agency obligated $831,300 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Since 1990 was the initial year of Section 319 funding, start-up activities represented a major program focus. These activities included developing state-by-state planning targets for funding based on interim criteria consistent with direction provided by Congress; preparing guidance on the award; and management of grants consistent with EPA's 1987 guidance and awarding grants for NPS activities based on funding priorities.

EPA also developed and implemented reporting and oversight procedures designed to ensure the integrity of the grants process and assure positive environmental results from the projects selected for funding. Activities included Headquarters review of selected management programs, grant work programs and watershed plans; participation with Regions in selected reviews of state programs; on-site review of Regional NPS programs; and provision for NPS information exchange between states.

## WATER QUALITY
### Water Quality Monitoring & Analysis

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Coastal Environment Management | | | | | |
| Salaries & Expenses | $5,431.7 | $7,256.2 | $7,256.0 | $8,808.4 | $1,552.4 |
| Abatement Control and Compliance | $15,627.4 | $28,248.9 | $28,248.9 | $40,648.9 | $12,400.0 |
| TOTAL | $21,059.1 | $35,505.1 | $35,504.9 | $49,457.3 | $13,952.4 |
| Water Quality Monitoring & Analysis | | | | | |
| Salaries & Expenses | $8,163.9 | $8,060.1 | $8,059.9 | $9,841.5 | $1,781.6 |
| Abatement Control and Compliance | $6,225.8 | $6,310.1 | $6,310.1 | $6,115.1 | -$195.0 |
| TOTAL | $14,389.7 | $14,370.2 | $14,370.0 | $15,956.6 | $1,586.6 |
| TOTAL: | | | | | |
| Salaries & Expenses | $13,595.6 | $15,316.3 | $15,315.9 | $18,649.9 | $3,334.0 |
| Abatement Control and Compliance | $21,853.2 | $34,559.0 | $34,559.0 | $46,764.0 | $12,205.0 |
| Water Quality Monitoring & Analysis TOTAL | $35,448.8 | $49,875.3 | $49,874.9 | $65,413.9 | $15,539.0 |
| **PERMANENT WORKYEARS** | | | | | |
| Coastal Environment Management | 97.5 | 139.8 | 139.8 | 160.6 | 20.8 |
| Water Quality Monitoring & Analysis | 146.7 | 149.1 | 149.1 | 156.5 | 7.4 |
| TOTAL PERMANENT WORKYEARS | 244.2 | 288.9 | 288.9 | 317.1 | 28.2 |
| **TOTAL WORKYEARS** | | | | | |
| Coastal Environment Management | 103.5 | 144.6 | 144.6 | 160.6 | 16.0 |
| Water Quality Monitoring & Analysis | 157.5 | 156.5 | 156.5 | 156.5 | 0.0 |
| TOTAL WORKYEARS | 261.0 | 301.1 | 301.1 | 317.1 | 16.0 |

## WATER QUALITY

### Water Quality Monitoring and Analysis

Budget Request

The Agency requests a total of $65,413,900 supported by 317.1 total workyears for 1992, an increase of $15,539,000 and an increase of 16.0 total workyears from 1991. Of the request, $18,649,900 will be for the Salaries and Expense appropriation and $46,764,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $3,334,000 in the Salaries and Expenses appropriation and an increase of $12,205,000 in the Abatement, Control and Compliance appropriation.

COASTAL ENVIRONMENTAL MANAGEMENT

1992 Program Request

The Agency requests a total of $49,457,300 and 160.6 total workyears for this program, of which $8,808,400 will be for the Salaries and Expenses appropriation and $40,648,900 will be for the Abatement, Control and Compliance appropriation. This represents increases of $1,552,400 in Salaries and Expenses, $12,400,000 in Abatement, Control and Compliance, and 16.0 in total workyears. The increase in Salaries and Expenses reflects support for increased workyears and increased personnel and operating costs. The increases in total workyears and in Abatement, Control and Compliance reflect two components of the President's ecological protection initiative: implementation of the Agency's Great Lakes initiative and the interagency Coastal America initiative.

In response to the mandates of the recently enacted Great Lakes Critical Programs Act of 1990, the President's ecological protection initiative includes significant additional resources directed to the Regions and the states who, in conjunction with the Great Lakes National Program Office (GLNPO), will continue to accelerate development of Remedial Action Plans (RAPs) for the 30 U.S. Areas of Concern (AOC) as well as for the five joint U.S./Canada AOCs. Lakewide Management Plans for Lakes Ontario and Michigan will continue on their accelerated schedule with the Lake Michigan LAMP being readied for submission to the International Joint Commission.

As a major part of the President's ecological protection initiative, the Agency, working closely with the National Oceanic and Atmospheric Administration, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service, will direct significant new resources towards a cooperative interagency approach to improve the Federal response to three major coastal problems: species and habitat alteration and loss, nonpoint source pollution, and contaminated sediments. This initiative, known as Coastal America, builds upon the collective capabilities and authorities of the participating agencies, thereby providing a broader range of authorities to effect change, the ability to share field expertise and resources, and an expanded range and scope of responsibilities and influence. Existing institutional frameworks and ongoing programs, such as the NEP management conferences, near coastal waters (NCW) strategies, and geographically targetted wastewater treatment construction grants will be used to facilitate proposed actions and to administer project grants.

Headquarters will continue support to the coastal Regions in 301(h) permit reissuance decisions and in conducting ocean discharge criteria evaluations for 403(c), as well as to continue developing regulations, technical guidance and support documents, and managing a national data base in support of these programs. The Agency will continue work to develop an overall framework for marine ecological risk assessment, implementation of Section 312 of the CWA to control marine sanitation devices, and operation of an ocean survey vessel to support sound environmental management decisions.

Headquarters and the coastal Regions will continue providing support to 17 management conferences in the National Estuary Program (NEP). NEP action projects to demonstrate innovative clean-up strategies will continue to be evaluated and shared with other regions and states as they are completed. The Agency will continue to develop tools and conduct training in response to needs identified by the Regions and states through the Regional NCW strategies. Headquarters will continue providing technical assistance to Regional and state staffs on integrating point source, nonpoint source, and water quality planning to address identified NCW problems. Regions IV and VI will continue to support the Gulf of Mexico Program.

1991 Program

In 1991, the Agency is allocating a total of $35,504,900 supported by 144.6 total workyears for this program, of which $7,256,000 is from the Salaries and Expenses appropriation and $28,248,900 is from the Abatement, Control and Compliance appropriation.

Headquarters and the coastal Regions are providing support to 17 management conferences in the NEP. The Agency is beginning to implement those Regional Near Coastal Water strategies that have completed development. To test pollution prevention effectiveness, grants are being provided to state and local governments for selected action demonstration projects identified as national priorities in NCW strategies or through the NEP projects.

The Agency continues developing regulations, technical guidance and support documents, and managing a national data base in support of coastal and marine regulatory responsibilities under Sections 301(h), 312, and 403(c). Headquarters is continuing support to the coastal Regions in 301(h) permit reissuance decisions and in conducting ocean discharge criteria evaluations for 403(c). The Agency is continuing to develop an overall framework for marine ecological risk assessment, implementation of Section 312 of the CWA to control marine sanitation devices, and ocean surveys conducted by the RV Anderson to support sound environmental management decisions.

Congressional Directives. A total of $1,000,000 is for the Congressionally directed project of controlling erosion and sedimentation in the Great Lakes Basin.

1990 Accomplishments

In 1990, the Agency obligated a total of $21,059,100 supported by 103.5 total workyears for this program, of which $5,431,700 was from the Salaries and Expenses appropriation and $15,627,400 was from the Abatement, Control and Compliance appropriation.

Through the NEP, the Agency provided support and oversight to twelve estuary projects. The Buzzards Bay project neared completion of its CCMP and began the implementation phase of the program. Five more projects completed the intensive environmental characterization and began Comprehensive Conservation Management Plan (CCMP) development. The six projects selected in 1988 began the intensive characterization phase. Five new projects were designated in 1990 based on a determination of national significance. For NCW initiatives, the Regions continued working with the states to assess environmental risks in NCWs, select and define priority problems, identify needed enhancements to ongoing programs, and identify and implement innovative abatement and control programs.

The Section 301(h) programs of Regions I, II, IX, and X focused on the evaluation of monitoring programs and permit reissuance, following completion of final waiver determinations for the remaining first round applications. Headquarters supported a study by the National Academy of Science on opportunities to improve wastewater management by urban coastal areas. The coastal Regions' Section 403(c) programs continued efforts to bring NPDES permittees into compliance with Section 403(c) criteria, consistent with the recommendations of the 1989 report to Congress.

## WATER QUALITY MONITORING AND ANALYSIS

### 1992 Program Request

The Agency requests a total of $15,956,600 supported by 156.5 total workyears for this program, of which $9,841,500 will be for the Salaries and Expense appropriation and $6,115,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $1,781,600 for Salaries and Expenses, a decrease of $195,000 for Abatement, Control and Compliance, and no change in total workyears from 1991. The increase in Salaries and Expenses reflects increased personnel costs. The reduction in Abatement, Control and Compliance reflects a significant reduction in traditional monitoring activities and a major shift to focus on watershed protection needs. This shift will increase national activities to identify and target priority watersheds, develop cost-effective rapid bioassessment methods and improved indicators, and revitalize water data systems to support watershed initiatives. These increased activities will support the Presidential ecological protection initiative.

EPA will reduce traditional monitoring program activities. We will reduce technical guidance and modeling workshops supporting TMDL/WLAs and scale back water quality monitoring and assessment activities for water quality trends. The Agency will also postpone planned improvements to Section 305(b) reports to later reporting cycles.

EPA will initiate efforts to assist States in establishing watershed assessment and targeting programs. Working with Regions and States, Headquarters will begin developing a national program to identify priority watersheds for targeted/integrated management programs. EPA will identify indicators reflecting ecological integrity and develop cost-effective rapid bioassessment methods to both assess aquatic ecosystem stress (for targeting) and measure the environmental gains of watershed protection initiatives. The Agency will sponsor a third national monitoring symposium to address these and other significant monitoring program directions.

EPA will revitalize water quality data systems to support more watershed-oriented applications, including developing electronic linkages to extensive environmental data bases maintained by other Federal, State, and local agencies. The data systems revitalization will also address expanding existing systems as needed to handle appropriate watershed data (including ancillary data bases) and to improve data transfer between mainframes and PCs.

1991 Program

The Agency requests a total of $14,370,000 supported by 156.5 total workyears for this program, of which $8,059,900 will be for the Salaries and Expense appropriation and $6,310,100 will be for the Abatement, Control and Compliance appropriation.

Based on previous national and state water quality studies and reports (such as the Section 304(l) and Section 305(b) reports), the program is concentrating on geographic areas where the presence of pollutants of concern (such as contaminated sediments, State priority NPS, toxics in the water column or bioaccumulative toxics) pose the greatest risk to human health and the aquatic environment. EPA is encouraging states to evaluate water quality in these areas as well as the sources of pollutants, and develop needed controls to minimize the risks to human health and the aquatic environment. States are developing total maximum daily loads (TMDLs), wasteload allocations (WLAs) and load allocations (LAs) where water quality-based controls are needed to reduce point and nonpoint source discharges.

EPA is developing a national Monitoring Mission Statement and is also sponsoring workshops to describe simplified methods that states can use to identify areas where contaminated sediment presents a high-risk, as well as remediation methods states can use at specific sites.

EPA is analyzing the 1990 state Section 305(b) reports and preparing the national water quality report to Congress. The Agency is also working closely with states to develop and implement guidance for preparing the State 1992 Section 305(b) reports.

EPA is continuing to strengthen state assessment and monitoring programs and further enhance the Waterbody System by linking it to state Geographic Information Systems and to national water quality data systems operated by other Federal agencies. The Regions are reviewing state workplans and specific water quality assessments and assisting in environmental data management.

Congressional Directives. A total of $200,000 is for the Congressionally directed project Southwest Arkansas/Southeast Oklahoma Millwood Basin Water Quality Study.

1990 Accomplishments

In 1990, the Agency allocated a total of $14,389,700 supported by 157.5 total workyears for this program, of which $8,163,900 was from the Salaries and Expenses appropriation and $6,225,800 was from the Abatement, Control and Compliance appropriation.

The program continued a high priority effort to assure effective implementation of Section 304(l) of the Clean Water Act, providing assistance and oversight in addressing deficiencies in state submissions. Where states failed to act, the Agency developed and promulgated lists of waters impaired by toxics and by other pollutants.

The Bioaccumulation Study was drafted and used along with other information to prepare a surface water risk assessment for pulp and paper companies. The program developed several draft guidance documents on how to assess and remediate sediment contamination problems where toxic pollutants are suspected of causing adverse impacts on aquatic life and bioaccumulation problems.

The surface water monitoring program encouraged states to adopt more cost-effective approaches, such as rapid biological assessments and use of citizen volunteer programs, to enhance and augment state monitoring programs. A series of workshops were conducted to address nonpoint source pollution monitoring and assessment, estuarine monitoring, sediment contamination and bioaccumulation of pollutants in fish tissue. EPA assisted states to monitor toxic pollutants and assess toxicity in the aquatic environment, through workshops and direct involvement in specific projects. States completed their 1990 Section 305(b) reports. The Agency continued to strengthen state analysis capabilities and improve water quality data management to enable integration with other data bases. A detailed river network (REACH file 3) was prepared for use in STORET and other data bases.

## WATER QUALITY
### Municipal Source Control

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Municipal Pollution Control | | | | | |
| Salaries & Expenses | $20,494.8 | $19,696.4 | $19,696.2 | $20,625.8 | $929.6 |
| Abatement Control and Compliance | $19,802.5 | $24,692.6 | $24,692.6 | $18,942.6 | -$5,750.0 |
| TOTAL | $40,297.3 | $44,389.0 | $44,388.8 | $39,568.4 | -$4,820.4 |
| Waste Treatment Operations & Maintenance | | | | | |
| Salaries & Expenses | $1,154.2 | | | | 0.0 |
| TOTAL | $1,154.2 | | | | 0.0 |
| TOTAL: | | | | | |
| Salaries & Expenses | $21,649.0 | $19,696.4 | $19,696.2 | $20,625.8 | $929.6 |
| Abatement Control and Compliance | $19,802.5 | $24,692.6 | $24,692.6 | $18,942.6 | -$5,750.0 |
| Municipal Source Control TOTAL | $41,451.5 | $44,389.0 | $44,388.8 | $39,568.4 | -$4,820.4 |
| **PERMANENT WORKYEARS** | | | | | |
| Municipal Pollution Control | 375.9 | 347.4 | 347.4 | 366.2 | 18.8 |
| Waste Treatment Operations & Maintenance | 23.7 | | | | 0.0 |
| TOTAL PERMANENT WORKYEARS | 399.6 | 347.4 | 347.4 | 366.2 | 18.8 |
| **TOTAL WORKYEARS** | | | | | |
| Municipal Pollution Control | 400.9 | 366.2 | 366.2 | 366.2 | 0.0 |
| Waste Treatment Operations & Maintenance | 24.5 | | | | 0.0 |
| TOTAL WORKYEARS | 425.4 | 366.2 | 366.2 | 366.2 | 0.0 |

## Municipal Pollution Control

### Budget Request

The Agency requests a total of $39,568,400 supported by 366.2 total workyears for 1992, a decrease of $4,820,400 and no change in total workyears from 1991. Of the request, $20,625,800 will be for the Salaries and Expenses appropriation, and $18,942,600 will be for the Abatement, Control and Compliance appropriation, an increase of $929,600 and a decrease of $5,750,000, respectively.

### MUNICIPAL POLLUTION CONTROL

### 1992 Program Request

The Agency requests a total of $39,568,400 supported by 366.2 total workyears for this program, of which $20,625,800 will be for the Salaries and Expenses appropriation and $18,942,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $929,600 in the Salaries and Expense appropriation, a decrease of $5,750,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel costs. The decreases in Abatement, Control and Compliance reflects the completion of start-up activities for State Revolving Funds (SRF) and certain Congressionally mandated projects.

In 1992, EPA will continue to manage the implementation of the SRF program as 51 SRF programs are operational and several states switch to more complex SRF financing proposals. Although funding for construction grants ended in 1990, including the 205(g) set-aside, over 4,000 remaining projects will require ongoing management. Headquarters will continue the overall management of this large construction grants workload by emphasizing prompt completion and closeout of active projects and resolution of audit problems, while maintaining the technical, environmental and financial integrity of the program. Regional office support through senior experienced professionals is vital to the expeditious completion of the program as well as the Regions oversee states' continuing management of the program. In cooperation with this effort, the Corps of Engineers with 168 workyears will maintain support to approximately 900 construction grants projects. EPA will continue to implement the Indian set-aside program through its Interagency Agreement with the Indian Health Service.

To assure that the national investment in wastewater treatment infrastructure is protected, Headquarters, in cooperation with the Regional offices and states will enhance long term compliance through proactive municipal water pollution prevention programs (MWPP). Headquarters will continue to direct operations and maintenance (O&M), operator training, small community outreach, and municipal financing including public/private partnerships to address needs. In addition, new initiatives and pilot programs will be undertaken that provide on-site support to the Regions and states to foster development, operation and oversight of MWPP. These demonstration projects will assist states with

training, workshops, self-audits, and provide direct onsite technical assistance through a team approach.

The Agency will continue its efforts on constructed wetlands, reduction in the nation's water use, and will continue work on municipal technology transfer. Headquarters will also undertake an International initiative to promote program development through the transfer of water information and technology to Eastern Europe, the Caribbean and U.S. Territories to assist in water pollution prevention and remediation efforts.

1991 Program

The Agency is allocating a total of $44,388,800 supported by 366.2 total workyears for this program, of which $19,696,200 is from the Salaries and Expenses appropriation and $24,692,600 is from the Abatement, Control and Compliance appropriation.

In 1991, EPA is continuing cooperation with the states to manage the implementation and oversight of the SRF program. With 51 SRF programs operating, the Agency's high level of effort puts forth extensive first round reviews of annual reports, as well as review and approval of more complex SRF financing proposals. The Agency is submitting the SRF Report to Congress and is finalizing the 1990 Needs Survey.

Although funding for the construction grants program ended in 1990, the traditional program management workload of state oversight responsibilities is continuing. Regions are managing a workload of over 4,900 active grant projects. The Agency is placing maximum emphasis on the completion and closeout of grant projects and resolution of audit problems. Funds allocated for the Corps of Engineers Interagency Agreement are supporting 214 total workyears to provide construction management assistance to EPA and the states. Indian wastewater treatment projects funded from the set-aside are in design and construction. These projects require significant coordination and negotiation with the Indian Health Service, tribes and Alaska Native Villages.

In 1991, the Agency is integrating operations and maintenance and operator training program activities with this program element to improve coordination and maximize resource utilization. EPA is implementing initiatives in municipal water pollution prevention, water conservation and technology transfer to assure that the national investment in wastewater treatment infrastructure is protected. The Agency is providing $800,000 for operator training grants to support effective on-site O&M and compliance assistance to operators of small publicly owned treatment works (POTWs).

EPA is expanding its cooperative effort of wastewater treatment and drinking water programs providing financing and technology assistance to small communities. The Agency will focus on establishing programs that encourage efficient water use, promote overall reduction of the nation's water use on a per capita basis and encourage a significant nationwide increase in the reclamation and reuse of wastewater for various applications. The Agency is finalizing the Sulfide Corrosion Report to Congress and is providing $1,000,000 to support the Water Pollution Control Federation Research Foundation. Headquarters is continuing to provide technical guidance and program assistance on sewage sludge management, pretreatment requirements and ground-water contamination from leaky

sewers. Also, Headquarters is enhancing its support for constructed wetlands which includes developing constructed wetlands guides.

Congressional Directives. A total of $4,250,000 is for Congressionally directed projects for Wastewater Treatment Training ($1,250,000), EPA Training Center/West Virginia University ($1,000,000), Small Flows/West Virginia University ($1,000,000), Water Conservation Task Force ($500,000), and the Water Pollution Control Federation Research Foundation ($500,000).

1990 Accomplishments

In 1990, the Agency obligated a total of $40,297,300 supported by 400.9 total workyears for this program, of which $ 20,494,800 was from the Salaries and Expenses appropriation and $19,802,500 was from the Abatement, Control and Compliance appropriation.

EPA continued to manage two wastewater treatment programs emphasizing the prompt completion of active construction grants projects and implementation oversight of SRF programs. The Agency developed a strategy to administer the completion of the construction grants program. The strategy identifies the necessary level and mix of program resources to handle the completion workload and is based on the ongoing partnership among EPA (including the Inspector General and Regions), the Corps of Engineers and the state agencies. Regions also maintained essential emphasis on traditional construction grants management activities which addresses a workload of approximately 5,800 grant projects. Negotiation and award of initial SRF grants and the conducting of first annual program reviews were the highest program priorities in the Regions.

As a result of the first funding cycle, the Agency provided funds for 18 Indian tribes and eight Alaska Native Villages in 1990. The $15,100,000 allocated for the Corps of Engineers Interagency Agreement supported 227 total workyears and provided construction management assistance to EPA and the states.

In 1990, EPA increased emphasis toward preventing pollution and assuring protection of the nation's multi-billion dollar infrastructure of major public health and water quality improvements. The Agency promoted the development of state programs related to municipal water pollution prevention, water conservation and technology transfer. $1,710,900 was targeted to operator training grants for on-site assistance to small communities. Regions provided increased information and assistance to help municipalities address alternative financing methods for wastewater treatment needs. The wastewater treatment and drinking water programs cooperated to provide information and assistance on financing and technology to hard-pressed small communities. Headquarters coordinated research, technology transfer and outreach activities with other agencies and national organizations, including the Small Flows Clearinghouse.

WASTE TREATMENT OPERATIONS AND MAINTENANCE

1992 Program Request

In 1992, resources to support operations and maintenance, including operator training activities are requested under the Municipal Pollution Control program element.

1991 Program

In 1991, resources to support operations and maintenance, including operator training activities are allocated under the Municipal Pollution Control program element.

1990 Accomplishments

In 1990, the Agency obligated a total of $1,154,200 supported by 24.5 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

The resources obligated to continue operator training grants under the Municipal Pollution Control program contributed to the development of effective state O&M and operator training programs and supported improved minor municipal facilities compliance.

With the grant funds noted in the municipal pollution control program above, state and EPA Regional staff provided on-site compliance assistance and operator training at about 600 minor POTWs. Regional/state operations management evaluations and operator training programs prevented noncompliance and remained a key component to the municipal water pollution prevention initiative. In addition to managing operator training grants, Regions continued to work directly with selected minor facilities to solve problems and oversee project performance certification reviews.

EPA recognized superior facilities through enhancements to its National and Regional Wastewater Excellence Awards programs. The Agency made 18 national awards and 70 Regional awards for the O&M program. In addition, the Agency continued to provide guidance, information and oversight assistance to the states and communities to strengthen local O&M programs for improved sludge, toxics, and innovative, alternative and conventional technologies management. In 1990, EPA initiated a "Youth and the Environment" program to introduce youth to career opportunities in the environmental field and help address manpower shortages for skilled operators. The Agency also prepared promotional material and case studies to assist POTWs in conducting Hazardous Household Waste collection events.

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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## WATER QUALITY
### Water Quality Enforcement

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Water Quality Enforcement | | | | | |
| Salaries & Expenses | $18,527.9 | $21,133.4 | $21,133.1 | $22,666.8 | $1,533.7 |
| Abatement Control and Compliance | $2,531.2 | $5,979.6 | $5,979.6 | $6,379.6 | $400.0 |
| TOTAL | $21,059.1 | $27,113.0 | $27,112.7 | $29,046.4 | $1,933.7 |
| TOTAL: | | | | | |
| Salaries & Expenses | $18,527.9 | $21,133.4 | $21,133.1 | $22,666.8 | $1,533.7 |
| Abatement Control and Compliance | $2,531.2 | $5,979.6 | $5,979.6 | $6,379.6 | $400.0 |
| Water Quality Enforcement TOTAL | $21,059.1 | $27,113.0 | $27,112.7 | $29,046.4 | $1,933.7 |
| **PERMANENT WORKYEARS** | | | | | |
| Water Quality Enforcement | 370.3 | 384.9 | 384.9 | 402.4 | 17.5 |
| TOTAL PERMANENT WORKYEARS | 370.3 | 384.9 | 384.9 | 402.4 | 17.5 |
| **TOTAL WORKYEARS** | | | | | |
| Water Quality Enforcement | 391.4 | 401.4 | 401.4 | 402.4 | 1.0 |
| TOTAL WORKYEARS | 391.4 | 401.4 | 401.4 | 402.4 | 1.0 |

## Water Quality Enforcement

### Budget Request

The Agency requests a total of $29,046,400 supported by 402.4 total workyears for 1992, an increase of $1,933,700 and 1.0 total workyear from 1991. Of this request, $22,666,800 is for the Salaries and Expenses appropriation and $6,379,600 is for the Abatement, Control and Compliance appropriation. This represents an increase of $1,533,700 for the Salaries and Expenses appropriation and an increase of $400,000 for the Abatement, Control and Compliance appropriation.

### WATER QUALITY ENFORCEMENT

### 1992 Program Request

The Agency requests a total of $29,046,400 supported by 402.4 total workyears for this program, of which $22,666,800 will be for the Salaries and Expenses appropriation and $6,379,600 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $1,533,700 for the Salaries and Expenses appropriation, an increase of $400,000 for the Abatement, Control and Compliance appropriation, and an increase of 1.0 total workyear. The increase for Salaries and Expenses reflects increased personnel costs. The increase for Abatement, Control and Compliance is the net result of both a decrease of $100,000 in enhancements to the Permit Compliance System and an increase of $500,000 for activity under the President's Ecology initiative to provide case support for NPDES and pretreatment enforcement cases in the Great Lakes, in conjunction with the Agency's Great Lakes Basin Initiative.

All but 135 municipal facilities are expected to have completed construction to meet final effluent limits by the end of 1992. EPA will continue to emphasize municipal compliance with final effluent limits, as the Agency works for further reduction of POTW significant noncompliance rates. Diagnostic inspections, composite correction plans, and judicial actions will be used to facilitate compliance where necessary. The Agency will work with states to implement individual Municipal Water Pollution Prevention (MWPP) programs, which establish procedures designed to prevent potential noncompliance by municipal facilities. EPA will evaluate overall accomplishments of the program and make necessary adjustments to the MWPP guidance.

The Agency will continue to promote better pretreatment implementation through approved local pretreatment programs. EPA will implement an expanded inspection program for POTWs and increase inspections of industrial users (IUs), thus providing a more intense review of the compliance status of Ius.

The enforcement program will continue to place a high priority on enforcement of permit requirements that limit the discharge of toxics. All major permittee will be inspected, and a timely and appropriate enforcement response will be emphasized in all cases of significant noncompliance. Administrative penalty orders will continue to be used. About 60 percent of all such orders are

Class I. An administrative compliance order requiring correction of the violation will accompany nearly all administrative penalty orders.

1991 Program

In 1991, the Agency is allocating a total of $27,112,700 supported by 401.4 total workyears for this program, of which $21,133,100 is from the Salaries and Expenses appropriation and $5,979,600 is from the Abatement, Control and Compliance appropriation.

The Agency is issuing implementation guidance on the MWPP. This program is being established to surface potential problems at POTWs in time to allow correction before violations occur. EPA is continuing to focus on municipal enforcement activity in an attempt to further reduce significant noncompliance rates for municipal facilities on final effluent limits.

In 1991, the goal of the pretreatment enforcement program is to encourage improved implementation by all 1,500 approved programs. EPA is continuing pretreatment compliance inspections where programs are not audited, reviewing annual reports and tracking POTW performance through the Pretreatment Permits and Enforcement Tracking System. EPA is continuing to rely on states and approved POTWs to ensure the compliance of industrial users with pretreatment standards. Where there is no approved local program, EPA along with states, is emphasizing the identification of categorical industrial users; compliance monitoring where such industries have been identified; and enforcement.

EPA is monitoring and enforcing toxic permit requirements. The Agency is using both chemical and biological methods to monitor compliance of toxics. Enforcement of toxicity requirements is focusing on identification of causes and expeditious elimination of toxicity using the best available technical knowledge in the scientific community.

1990 Accomplishments

In 1990, the Agency obligated a total of $21,059,100 supported by 391.4 total workyears for this program, of which $18,527,900 was from the Salaries and Expenses appropriation and $2,531,200 was from the Abatement, Control and Compliance appropriation.

As of October 1, 1990, 82 percent of the National Municipal Policy (NMP) universe had completed construction to comply with final effluent limits. Only 10 of the original 1,478 major NMP facilities were not yet in compliance, on an enforceable schedule or referred for judicial enforcement action. Enforceable construction schedules were established for 75 percent of the 1,240 minor municipal facilities needing schedules.

EPA monitored POTWs to ensure adequate implementation of their approved local pretreatment program and used enforcement actions against POTWs that failed to implement their programs. EPA issued 24 administrative penalty orders against municipalities for failure to adequately implement approved local pretreatment programs and referred nine municipalities for judicial action. In addition, enforcement action against 50 of the 61 cities included in the October 1989 national pretreatment enforcement initiative were concluded, resulting in penalties of over $2,925,000. During 1990, EPA conducted over 316 pretreatment

compliance inspections of POTWs and 63 pretreatment inspections of industrial users. EPA also took action directly against industrial users. Thirty-five administrative penalty orders were issued and 18 industrial users were referred for judicial actions. In 1990, the Agency conducted numerous pretreatment workshops. Specifically, these workshops covered the development of enforcement response plans and trained city attorneys in pretreatment enforcement.

In 1990, EPA conducted training on the Compliance Monitoring and Enforcement Strategy for Toxics Control and Toxicity Reduction Evaluations. The Agency, along with states, began implementation of the Strategy by reporting toxicity violations on the Quarterly Noncompliance Report, issuing administrative orders and administrative penalty orders to address violations, and providing technical assistance to permittees doing Toxicity Reduction Evaluations.

Enforcement of Section 311 oil hazardous substance spill requirements included 124 referrals to the U.S. Coast Guard for assessment of civil penalties and 48 administrative actions for violations of Spill Prevention Control Countermeasure plan requirements.

## WATER QUALITY
### Water Quality Permit Issuance

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Permit Issuance | | | | | |
| Salaries & Expenses | $14,398.2 | $16,340.7 | $16,335.4 | $19,623.9 | $3,288.5 |
| Abatement Control and Compliance | $7,269.7 | $8,047.4 | $8,047.4 | $8,293.4 | $246.0 |
| TOTAL | $21,667.9 | $24,388.1 | $24,382.8 | $27,917.3 | $3,534.5 |
| TOTAL: | | | | | |
| Salaries & Expenses | $14,398.2 | $16,340.7 | $16,335.4 | $19,623.9 | $3,288.5 |
| Abatement Control and Compliance | $7,269.7 | $8,047.4 | $8,047.4 | $8,293.4 | $246.0 |
| Water Quality Permit Issuance TOTAL | $21,667.9 | $24,388.1 | $24,382.8 | $27,917.3 | $3,534.5 |
| **PERMANENT WORKYEARS** | | | | | |
| Permit Issuance | 290.9 | 327.1 | 327.1 | 362.7 | 35.6 |
| TOTAL PERMANENT WORKYEARS | 290.9 | 327.1 | 327.1 | 362.7 | 35.6 |
| **TOTAL WORKYEARS** | | | | | |
| Permit Issuance | 305.5 | 340.8 | 340.8 | 362.7 | 21.9 |
| TOTAL WORKYEARS | 305.5 | 340.8 | 340.8 | 362.7 | 21.9 |

## Water Quality Permit Issuance

### Budget Request

The Agency requests a total of $27,917,300 supported by 362.7 total workyears for 1992, an increase of $3,534,500 and 21.9 total workyears from 1991. Of the request, $19,623,900 will be for the Salaries and Expenses appropriation and $8,293,400 will be for the Abatement, Control and Compliance appropriation. This represents increases of $3,288,500 in the Salaries and Expenses appropriation $246,000 in Abatement, Control and Compliance.

### PERMIT ISSUANCE

### 1992 Program Request

The Agency requests a total of $27,917,300 supported by 362.7 total workyears for this program, of which $19,623,900 will be for the Salaries and Expenses appropriation and $8,293,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $3,288,500 in Salaries and Expenses, an increase of $246,000 in the Abatement, Control and Compliance appropriation and an increase of 21.9 in total workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The increase in Abatement, Control and Compliance represents the reprogramming of resources for hazardous waste regulatory support under the Resource Conservation and Recovery Act (RCRA) to support pretreatment activities. The increase in workyears provides support for geographically targeted permit efforts, especially to areas impacted by storm water and combined sewer overflow, and reprogramming of RCRA workyears to better coordinate pretreatment and sludge management activities cross media.

The Agency will propose or promulgate revisions to basic National Pollutant Discharge Elimination System (NPDES) regulations, the storm water regulations for moratorium sources, and revisions to general pretreatment regulations. EPA will continue to support expected legal challenges to Domestic Sewage Study regulation, storm water, NPDES and other regulations promulgated in 1990 and 1991. Contract funds will be used for litigation, regulatory and evidentiary hearing support.

The Agency will continue to assist in the development, review and approval of state (and Indian tribe) NPDES programs and modifications, encouraging states to obtain sludge permitting and general permitting authority. The latter is key to the implementation of the storm water program. To ensure national consistency, EPA will conduct permit quality reviews and state audits.

The Agency will provide guidance and assistance to support water quality-based permitting (toxics control), pretreatment implementation, Near Coastal Water permitting, and variances. EPA will also conduct training courses, workshops, and seminars on basic permit writing to include segments on pollution prevention, toxic permitting, sludge permitting, and pretreatment. EPA will

increase technical assistance and specific permit support to states on combined sewer overflows (CSOs) and storm water permits in support of geographically targeted efforts.

In 1992 the Agency will publish a regulation under existing statutory authority imposing fees for the issues of NPDES permits in nondelegated States. The fees will cover the cost of issuing permits and are expected to raise $10 million annually for deposit in the General Fund.

1991 Program

In 1991, the Agency is allocating a total of $24,382,800 supported by 340.8 total workyears for this program, of which $16,335,400 is from the Salaries and Expenses appropriation and $8,047,400 is from the Abatement, Control and Compliance appropriation.

EPA is emphasizing the reissuance of expiring major permits incorporating toxic/toxicity limits based on biomonitoring and/or chemical specific testing. EPA is emphasizing the issuance of CSO permits and assisting states in implementing the CSO strategies developed in 1990. To protect critical habitats, EPA is strengthening its focus on issuing permits to near coastal water (NCW) discharges of pollutants of concern, especially where CSO or stormwater discharges are problems.

EPA is focusing on pollution prevention through reissuance of major municipal permits that include requirements for publicly owned treatment works (POTWs) to assess the need to plan for plant upgrades and expansion. Training modules encourage consideration of innovative approaches to municipal pollution prevention and assist in developing permit requirements for planning plant upgrades. Pollution prevention is also a significant part of the NCW activities through increased support of the pretreatment program.

EPA is continuing to conduct detailed POTW pretreatment program reviews, with appropriate follow-up, to ensure effective implementation. EPA is assisting POTWs to develop/modify local limits to control toxics/hazardous pollutants in accordance with revised pretreatment regulations and to ensure compliance with sludge requirements and water quality-based limits in POTW permits.

EPA continues to assist states in issuing/modifying toxic/toxicity based permits and is working with states to improve their toxic control programs. The Agency is continuing to review state (and Indian tribe) NPDES programs and program modifications, with emphasis on general permit authority, and to encourage state assumption of sludge permitting programs.

EPA promulgated storm water application regulations and is proposing NPDES regulations to implement programmatic and other Water Quality Act (WQA) related revisions. EPA is completing the Section 519 pretreatment and the stormwater reports to Congress.

1990 Accomplishments

In 1990, the Agency obligated a total of $21,667,900 supported by 305.5 total workyears for this program, of which $14,398,200 was from the Salaries and

Expenses appropriation and $7,269,700 was from the Abatement, Control and Compliance appropriation.

EPA continued to emphasize control of hazardous and toxic pollutants from direct dischargers. EPA gave priority to completing the issuance of Individual Control Strategies (ICSs) to major and minor dischargers listed as required by Section 304(l) of the Clean Water Act (CWA), as amended. Remaining permits were 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 for organic chemicals.

EPA continued to review NPDES state programs and program modification requests. EPA assisted states to develop sludge programs and strengthen their toxic control programs in accordance with action plans.

In 1990, EPA assisted 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 continued to audit POTWs to evaluate application of categorical standards, local limits and issuance of control mechanisms. The Agency provided guidance and contract assistance to implement revisions to the general Pretreatment Regulations based on Pretreatment Implementation Review Task Force recommendations; 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 were provided on toxicity testing, biomonitoring, and state/POTW pretreatment implementation.

The Agency promulgated the General Pretreatment Regulation revisions reflecting requirements of the Domestic Sewage Study.

# 4. DRINKING WATER

**ENVIRONMENTAL PROTECTION AGENCY**

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## DRINKING WATER

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| APPROPRIATION | | | | | |
| Salaries & Expenses | $37,437.6 | $41,419.0 | $41,462.4 | $45,881.4 | $4,419.0 |
| Abatement Control and Compliance | $72,374.2 | $82,338.8 | $82,338.8 | $78,463.8 | -$3,875.0 |
| Research & Development | $10,060.4 | $10,431.2 | $10,431.2 | $11,803.2 | $1,372.0 |
| TOTAL, Drinking Water | $119,872.2 | $134,189.0 | $134,232.4 | $136,148.4 | $1,916.0 |
| Reregistration and Expedited Processing | $557.1 | $402.8 | $402.8 | | -$402.8 |
| PERMANENT WORKYEARS | 684.3 | 776.4 | 776.4 | 807.4 | 31.0 |
| TOTAL WORKYEARS | 726.1 | 800.7 | 800.7 | 807.4 | 6.7 |
| OUTLAYS | $110,071.8 | $121,473.0 | $121,513.4 | $122,210.1 | $696.7 |
| AUTHORIZATION LEVELS | The Safe Drinking Water Act of 1986 reauthorized this program at a level of $199,570.0 for 1990 and $199,570.0 for 1991. Authorization for the Safe Drinking Water Act expires on September 30, 1991. | | | | |

# DRINKING WATER

## OVERVIEW AND STRATEGY

EPA, under the Safe Drinking Water Act (SDWA) as amended in 1986, assures that public water supplies are free of contaminants that may cause health risks and protects ground water resources by preventing the endangerment of underground sources of drinking water. EPA pursues a twofold approach, 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, mandating sweeping changes in nationwide safeguards and new responsibility to enforce them in the event of state inaction. EPA's strategy is to usher in this new, comprehensive level of drinking water protection by maximizing voluntary compliance through a balance of enhanced enforcement presence, pollution prevention, state capacity building, mobilization of local government support and innovative partnerships. EPA has established its implementation priorities according to the degree of human health risk, focusing on four classes of contaminants with the highest health risks nationwide: microbiological pathogens, lead, radionuclides and disinfection by-products. Similarly, enforcement priorities, embodied in the definition of Public Water System (PWS) Significant Non-Compliance (SNC), are risk based.

EPA is also focusing on the prevention of contamination of vulnerable ground-water resources by assisting states to develop and implement comprehensive ground-water protection strategies. These strategies will address both the full range of actual and 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; in particular, EPA is increasing emphasis on the vast number of diverse shallow (Class V) injection wells.

### Drinking Water Standard Setting

EPA defines its risk-reduction objectives for drinking water protection through promulgation of National Primary Drinking Water Regulations (NPDWRs). NPDWRs are developed for any contaminants "known or anticipated to occur" in PWSs that may have any adverse human health effects. The SDWA Amendments prescribe a stringent timetable for regulating the 83 contaminants referenced in the law, a subsequent triennial cycle for listing and regulating additional contaminants, specific treatment technology requirements, and monitoring for unregulated contaminants.

EPA sets standards 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 takes into account the potential burden of the wholesale increase in the number of regulatory requirements, by building into the standards themselves both flexibility and streamlined administrative requirements. The accompanying

monitoring and reporting requirements may be staggered by the states, giving smaller systems more time to prepare for monitoring and compliance.

The major contaminants remaining to be addressed in 1992 include the Phase V Rule covering 24 inorganic and synthetic organic chemicals, the proposed rule for 25 chemicals on the second Contaminant Priority List, radionuclides, arsenic, and disinfectants and disinfection by-products. In addition, EPA will begin the mandated triennial review of all Maximum Contaminant Levels (MCLs), beginning with the Fluoride rule and the Volatile Organic Contaminant (VOC) rule. EPA estimates that full implementation of these drinking water regulations will achieve significant health benefits: avoidance of 400,000 cases of gastrointestinal illness and 400 deaths due to this illness per year and 180 cases of cancer. In addition, full implementation of the lead rule will bring blood lead levels of over 500,000 children per year below the level associated with effects on neurological development.

States have had notable success in maintaining and increasing systems' compliance through their traditional programs. These programs reflect a balance of preventative measures (regular surveillance of systems' operations, review of planned facility changes, operator certification), technical assistance and an enforcement deterrent. However, additional regulatory requirements, arising from the 1986 amendments, mean increased non-compliance, hence increased enforcement requirements.

EPA determines its enforcement priorities on the basis of health risk, focusing on the prevalence of microbiological, lead, radionuclide and disinfection by-product contamination. Enforcement is the linchpin of state/EPA efforts to promote voluntary compliance. Credible enforcement deterrence complements the direct promotion of compliance by ensuring that no public water system will realize (apparent) advantage by not making the necessary enhancements to meet the requirements. Even with the increased enforcement resources requested in 1992, EPA and states will only have enough resources to target the most serious NPDWR violations, continuing to take Federal action on all SNC violators (SNCs are based on frequency of violations and seriousness of violations) that the states have failed to bring into compliance.

PWS Program Implementation

EPA's first priority is to support the expansion of state program capabilities, essential to implement the growing regulatory framework. The critical factor is state partnership. Under the Federal-state framework established by the SDWA, EPA relies on the states to realize its program objectives. Therefore, it is essential for the states to become agents for change. Not only must the states expand their commitment to broad protection of drinking water supplies, but they must also invest in developing new approaches to interacting with public water systems, local governments and other interested parties in order to increase their effectiveness. Through its mobilization initiative and its local government initiative, EPA is seeking to leverage scarce Federal and state resources. This pioneering approach will mobilize all parties with a stake in safe drinking water to seek change at the grass roots level and bring to bear the considerable existing resources of local governments.

In its PWS Program implementation, EPA is emphasizing "marketing" voluntary compliance across the regulated community, focusing on the thousands of small public water systems that predominate the PWS regulated community. Beyond the task of simply reaching so many systems (in order to prevent a vast number of inadvertent violations), EPA is encouraging states to address the primary causes of system non-compliance (such as customer resistance to higher rates, inadequate facilities and poor training and expertise) through institutional innovations, technology and training support, public education, and other mobilization efforts. To this end, EPA is sponsoring various initiatives and demonstrations to promote small-systems viability.

Underground Injection Control

Through its Underground Injection Control (UIC) Program, EPA and 40 state primacy programs will continue to maintain regulatory coverage of 308,000 underground injection wells. However, EPA and the states will increase their emphasis on contamination risks from Class V wells that encompass 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. EPA's "Shallow Injection Well Program Strategy" calls for outlining an action plan combining traditional regulatory controls (on the highest-risk well categories) with more innovative approaches to foster voluntary control practices.

The strategy entails an analytical process for EPA and the states to screen the Class V universe and prescribe appropriate levels or forms of control, based on the level of potential endangerment to ground-water resources. In 1992 implementation will be guided also by the results of EPA-funded demonstration projects (funded in 1990), designed to field test the best approaches to Class V controls. In 1992 the most intense shallow-well activities are likely to be the closure and enforcement of wells newly defined to be illegal "Class IV" injection wells, pursuant to the Hazardous Waste program's redefinition of the toxicity characteristic for designating waste as hazardous.

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

The principal objective of EPA's ground-water protection activities in 1992 will be assisting and supporting the states in the development and implementation of Comprehensive Ground-Water Protection Programs (Comprehensive Programs). With Comprehensive Programs, ground-water protection will move beyond the limited parameters of Federal and state source control programs and focus on protection of the ground-water resource as a whole and the tailoring of site specific solutions. The Comprehensive Programs serve as the mechanism to coordinate Federal ground-water protection activities under relevant statutes (e.g., CERCLA,

RCRA, FIFRA, CWA, SDWA) as well as state and local authorities and programs. In addition, EPA will work with other Federal agencies, such as the Department of Agriculture, Department of Transportation and the Department of the Interior, to integrate the activities of their local and state-level programs into State Comprehensive Ground-Water Protection Programs.

EPA will emphasize the importance of prioritizing activities in high risk areas by incorporating the wellhead protection program and state pesticides management plans into Comprehensive Programs. In addition, EPA will expand support for innovative activities/projects which prevent contamination of ground water by non-traditional sources.

EPA will also work to improve the scientific knowledge underlying ground-water protection by assessing the potential for using biological criteria as indicators of ecological impacts of ground-water contamination. The relationship between ground-water discharge and surface water quality in sensitive aquatic ecosystems.

In 1992, EPA will assist states in building and strengthening their capabilities in collecting, managing, and accessing data on the ground-water resource. Through the adoption of the minimum data element set for ground water, states can not only ensure the reliability and integration of ground-water data, but also facilitate the implementation of comprehensive ground-water data management. In addition, EPA will develop policies and procedures for incorporating nitrate information into ground-water data bases.

Research and Development

The Agency's Office of Research and Development will continue to focus ground water research on subsurface transport and fate processes and agricultural processes that influence ground-water contamination. In 1992, research centers on the processes that facilitate transport, biological transformation, and oxidation-reduction focusing on the behavior of complex mixtures. The results of the research will allow better human exposure assessments from ground-water contamination. The program will also develop an integrated research effort focusing on new approaches to delineate and manage ground-water quality within wellhead protection areas, support methods development to detect ground-water contaminants, understand and predict their behavior, evaluate in-situ restoration as being a viable cost-effective alternative for cleanup, and support UIC and regulatory efforts.

The Agency will develop data on the chemistry and toxicology of drinking water disinfectants used in place of chlorine, primarily ozone and chloramine and their reaction by-products. Many municipalities will begin using ozone and chloramine for drinking water disinfection to avoid high levels of chlorinated disinfection by-products. Currently, little is known about either the spectrum of by-products that might be expected from the aforementioned disinfection regimes or the toxicological properties of these chemicals and/or mixtures of chemicals. Biologically directed fractionation will be used to identify the compounds presenting the highest probable human health risk. Research will strengthen the development and validation biomarkers to quantify exposure and effects, with particular emphasis placed on the gastro-intestinal tract where first exposure to chemicals occurs.

Consulting Services

Consulting services are used to supplement existing in-house expertise in the drinking water program. These services are utilized in the development and review of regulations, policy and guidance documents pertaining to drinking water standards, PWS and UIC program implementation and the identification of emerging waterborne environmental or human health hazards.

| PROGRAM ACTIVITIES | ACTUAL 1990 | CURRENT ESTIMATE 1991 | ESTIMATE 1992 | INCREASE+ DECREASE- 1992 VS. 1991 |
|---|---|---|---|---|
| Incremental Outputs | | | | |
| UIC Permit Determinations | | | | |
| for existing and new facilities, by primacy states | 8,606 | 6,094 | 6,094 | 0 |
| for existing and new facilities, by EPA | 547 | 534 | 516 | -18 |
| UIC Mechanical Integrity testing | 35,741 | 25,461 | 25,355 | -106 |
| UIC Compliance Review[1] | 34,561 | 0 | 0 | 0 |
| PWS Primacy Development Grants to Indian Tribes | 1 | 2 | 3 | 1 |
| Enforcement Actions - PWS | | | | |
| Inspections | n/a | n/a | n/a | |
| Notices of Violation | 453 | 527 | 576 | 49 |
| Administrative Orders | 149 | 227 | 252 | 25 |
| Civil Litigation (new) | 2 | 3 | 3 | 0 |
| Criminal Litigation | 0 | 0 | 0 | 0 |
| Enforcement Actions - UIC | | | | |
| Inspections | 99,129 | 56,552 | 56,144 | -408 |
| Notices of Violation | n/a | n/a | n/a | |
| Administrative Orders | 165 | 137 | 137 | 0 |
| Civil Ligation (new) | 3 | 5 | 6 | 1 |
| Criminal Ligation | 0 | 0 | 0 | 0 |
| Cumulative Outputs | | | | |
| PWS Primacy States | 54 | 55 | 55 | 0 |
| UIC Primacy States (full and partial programs) | 35/5 | 35/5 | 35/5 | 0 |
| Designated Sole Source Aquifers | 55 | 63 | 72 | 9 |
| Approved State Wellhead Protection Programs[2] | 13 | 25 | 50 | 25 |

[1] Reduction in 1991 and 1992 results from phase out of this activity in order to increase Class IV and V well and UIC enforcement activities.

[2] Output is added to report on a statutory mandated program to protect drinking water under section 1428 of the SDWA.

Research and
Development

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## DRINKING WATER
### Drinking Water Research

| PROGRAM | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| Scientific Assessment - Drinking Water | | | | | | |
| Salaries & Expenses | | $431.8 | $495.4 | $495.4 | $614.6 | $119.2 |
| Research & Development | | $255.4 | $268.2 | $268.2 | $288.2 | $20.0 |
| | TOTAL | $687.2 | $763.6 | $763.6 | $902.8 | $139.2 |
| Monitoring Systems & Quality Assurance - Drinking Water | | | | | | |
| Salaries & Expenses | | $2,487.0 | $2,061.8 | $2,061.8 | $2,444.0 | $382.2 |
| Research & Development | | $1,564.7 | $1,477.6 | $1,477.6 | $1,537.0 | $59.4 |
| | TOTAL | $4,051.7 | $3,539.4 | $3,539.4 | $3,981.0 | $441.6 |
| Health Effects - Drinking Water | | | | | | |
| Salaries & Expenses | | $3,091.9 | $3,019.0 | $3,019.0 | $1,884.7 | -$1,134.3 |
| Research & Development | | $2,795.0 | $2,886.0 | $2,886.0 | $2,574.7 | -$311.3 |
| | TOTAL | $5,886.9 | $5,905.0 | $5,905.0 | $4,459.4 | -$1,445.6 |
| Environmental Engineering & Technology - Drinking Water | | | | | | |
| Salaries & Expenses | | $3,002.1 | $2,945.1 | $2,989.4 | $3,660.4 | $671.0 |
| Research & Development | | $1,816.9 | $2,604.4 | $2,604.4 | $2,213.3 | -$391.1 |
| | TOTAL | $4,819.0 | $5,549.5 | $5,593.8 | $5,873.7 | $279.9 |
| Environmental Processes & Effects - Drinking Water | | | | | | |
| Salaries & Expenses | | $1,863.5 | $1,728.9 | $1,728.9 | $1,834.1 | $105.2 |
| Research & Development | | $3,628.4 | $3,195.0 | $3,195.0 | $5,190.0 | $1,995.0 |
| | TOTAL | $5,491.9 | $4,923.9 | $4,923.9 | $7,024.1 | $2,100.2 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $10,876.3 | $10,250.2 | $10,294.5 | $10,437.8 | $143.3 |
| Research & Development | | $10,060.4 | $10,431.2 | $10,431.2 | $11,803.2 | $1,372.0 |
| Drinking Water Research | TOTAL | $20,936.7 | $20,681.4 | $20,725.7 | $22,241.0 | $1,515.3 |

## DRINKING WATER
### Drinking Water Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PERMANENT WORKYEARS** | | | | | |
| Scientific Assessment - Drinking Water | 6.5 | 8.0 | 8.0 | 10.0 | 2.0 |
| Monitoring Systems & Quality Assurance - Drinking Water | 39.6 | 38.8 | 38.8 | 44.8 | 6.0 |
| Health Effects - Drinking Water | 55.7 | 58.2 | 58.2 | 30.9 | -27.3 |
| Environmental Engineering & Technology - Drinking Water | 50.3 | 53.3 | 53.3 | 64.3 | 11.0 |
| Environmental Processes & Effects - Drinking Water | 26.6 | 27.2 | 27.2 | 28.2 | 1.0 |
| TOTAL PERMANENT WORKYEARS | 178.7 | 185.5 | 185.5 | 178.2 | -7.3 |
| **TOTAL WORKYEARS** | | | | | |
| Scientific Assessment - Drinking Water | 6.9 | 8.0 | 8.0 | 10.0 | 2.0 |
| Monitoring Systems & Quality Assurance - Drinking Water | 40.9 | 38.8 | 38.8 | 44.8 | 6.0 |
| Health Effects - Drinking Water | 58.3 | 58.2 | 58.2 | 30.9 | -27.3 |
| Environmental Engineering & Technology - Drinking Water | 52.2 | 53.3 | 53.3 | 64.3 | 11.0 |
| Environmental Processes & Effects - Drinking Water | 29.9 | 27.2 | 27.2 | 28.2 | 1.0 |
| TOTAL WORKYEARS | 188.2 | 185.5 | 185.5 | 178.2 | -7.3 |

## DRINKING WATER

### Drinking Water Research

#### Principal Outputs

1992:
- Response to public comment for Phase V chemicals (Scientific Assessment).
- Review and revision of 30 health advisories (Scientific Assessment).
- Provide guidance on monitoring strategies for wellhead protection areas (Monitoring).
- Report on the carcinogenic effects of chloroacetaldehydes and dichloropropanones found in drinking water when chlorinated (Health).
- Interim performance evaluation for ozone, chlorine dioxide, and chloromines as alternative disinfectants (Engineering).
- Report on the control of regulated synthetic organic compounds in drinking water (Engineering).
- Report on protocols for monitoring corrosivity of water (Engineering).
- Report on determining water quality changes using the oxygen activation log (Environmental Processes).
- Report on field tested methods for determining mechanical integrity of injection wells (Environmental Processes).
- Report on evaluation and refinement of wellhead protection area delineation methods (Environmental Processes).
- Report on methods for assessing the impact of land use on groundwater quality (Environmental Processes).

1991:
- Prepare and respond to public comments on Phase IV and V contaminates, revise corresponding criteria documents (Scientific Assessment).
- Publish final Health Risk Assessments for Phase II chemicals (Scientific Assessment).
- Provide report on the sampling variance caused by well construction, materials, and operations (Monitoring).
- Evaluate and adapt, where possible, existing oil exploration methods

for groundwater monitoring (Monitoring).

- Report on carcinogenic and reproductive effects of chloroacetic acids (Health).
- Report on the feasibility of conducting an epidemiologic study on the chronic effects of using ozone as a disinfectant (Health).
- The adequacy and cost effectiveness of disinfectant by-products control (Engineering).
- Provide report on disinfection of legionella and associated bacteria in drinking water (Engineering).

1990:

- Completed draft risk assessments and criteria documents for Phase II chemicals incorporating public comment (Scientific Assessment).
- Provided improved methods for predicting contaminant movement and transformation (Monitoring).
- Reported on the mechanistic approaches to assess the interactions of drinking water contaminants (Health).
- Reported on cancer risks associated with the disinfection of drinking water (Health).
- Develop and verify Legionella inactivation data for public plumbing systems (Engineering).
- Provide report on inactivation of Cytptosporitium Oocysts (Engineering).
- Provided report on point-of-entry systems for removal of radon (Engineering).
- Reported on ozonization products in drinking water (Environmental Processes).

# DRINKING WATER

## Drinking Water Research

### Budget Request

The Agency requests a total of $22,241,000 supported by 178.2 total workyears for 1992, an increase of $1,515,300 and a decrease of 7.3 in total workyears from 1991. Of the request, $10,437,800 will be for the Salaries and Expenses appropriation and $11,803,200 will be for the Research and Development appropriation, increases of $143,300 and of $1,372,000 respectively. The increase in Salaries and Expenses reflect additional costs associated with payroll, while the increase in Research and Development reflects support for new initiatives for groundwater contamination in food/agricultural production processes and in wellhead protection research.

### 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:

- Health assessment information to support the Office of Drinking Water in revising regulations to control drinking water contaminants under the SDWA and technical support to the regions and states in ascertaining causes of outbreaks from waterborne infectious diseases and determining the hazard to humans from exposure to infectious agents through drinking water.

- Develop and evaluate analytical procedures to monitor drinking water contaminants and evaluate treatment processes and costs to support ODW regulatory decision-making.

- Provide the scientific basis for the protection of underground drinking water sources to implement the SDWA.

### SCIENTIFIC ASSESSMENT

#### 1992 Program Request

The Agency requests a total of $902,800 supported by 10.0 total workyears for this program, of which $614,600 will be for the Salaries and Expenses appropriation and $288,200 will be for the Research and Development appropriation. This represents an increase of $119,200 in the Salaries and Expenses appropriation. This increase is requested to fund the Federal workforce needed to implement the President's program in 1992. This represents an increase of $20,000 in the Research and Development appropriation and an increase of 2.0 in total workyears. These increases reflect the regulatory office request for more risk assessment documentation necessary for rule making.

ORD will provide quantitative health risk assessments from exposure to drinking water contaminants, for use in development of drinking water standards. It includes preparation and responses to public comments on specific Phase IV and Phase V chemicals, revision of corresponding criteria documents and preparation of final criteria documents for defined phase VI chemicals. Continued assistance will be given for the promulgation of Phase IV & V regulations.

1991 Program

In 1991, the Agency is allocating a total of $763,600 supported by 8.0 total workyears for this program, of which $495,400 is from the Salaries and Expenses appropriation and $268,200 is from the Research and Development appropriation.

ORD is finalizing responses to public comments received for the Phase V chemicals and assisting in the final promulgation of the Phase II regulations. Two Phase IV criteria documents and seventeen Phase VI health risk assessments are being prepared. Seventeen drinking water criteria documents for toxicological effects will be prepared for Phase VI chemicals. The program also provides technical support to the regions and states.

1990 Accomplishments

In 1990, the Agency obligated a total of $687,200 supported by 6.9 total workyears for this program, of which $431,800 was from the Salaries and Expenses appropriation and $255,400 was from the Research and Development appropriation.

Major accomplishments include finalized public comments on Phase II chemicals, preparation of final drafts on documents for two Phase IV chemicals and final drafts for all Phase V chemicals, thirteen final drafts on Phase VI toxicological effects chapters and three documents were prepared.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1992 Program Request

The Agency requests a total of $3,981,000 supported by 44.8 total workyears for this program, of which $2,444,000 will be for the Salaries and Expenses appropriation and $1,537,000 will be for the Research and Development appropriation. This represents an increase of $382,200 in the Salaries and Expenses appropriation. The increase is requested to fund the Federal workforce needed to implement the President's program in 1992. This represents an increase of $59,400 in the Research and Development appropriation, and an increase of 6.0 in total workyears. These increases reflect additional dietary exposure research associated with the total food chain.

ORD will provide research and technical support for quality assurance activities supporting the states, regions and user communities through the transfer of technologies including analytical methods, quality assurance protocols and reduced cost techniques for testing samples. Research continues to determine microbial quality of drinking water; methods for isolation and detection of Giardia, Cryptosporidium and Legionella; use of molecular biological techniques to improve and validate microbial analysis; and research on disinfection/disin-fection by-products.

Researchers will evaluate, identify and assess technologies to improve injection well practices, assess fluid movement from injection wells and develop laser induced fluorescence to monitor groundwater by fiber optics. Major emphasis will be placed on development of devices for continuous monitoring and to improve techniques for extraction of samples in wellhead protection areas, develop geographical information systems for data base management and on geophysical surveys for characterization of injection wells.

1991 Program

In 1991, the Agency is allocating a total of $3,539,400 supported by 38.8 total workyears for this program, of which $2,061,800 is from the Salaries and Expenses appropriation and $1,477,600 is from the Research and Development appropriation.

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.

1990 Accomplishments

In 1990, the Agency obligated a total of $4,051,700 supported by 40.9 total workyears for its monitoring and quality assurance program in drinking water, of which $2,487,000 was from the Salaries and Expenses appropriation and $1,564,700 was from the Research and Development appropriation.

To support the revised National Primary Drinking Water Regulations (NPDWR), ORD developed and standardized numerous chemical and microbiological methods for determining volatile, semi-volatile, and non-volatile organic compounds. A handbook was completed for use by the regions and states on design and installation of groundwater monitoring wells. Inter-laboratory 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

1992 Program Request

The Agency requests a total of $4,459,400 supported by 30.9 total workyears for this program, of which $1,884,700 will be for the Salaries and Expenses appropriation and $2,574,700 will be for the Research and Development appropriation. This represents decreases of $1,134,300 and $311,300 respectively, and a decrease of 27.3 in the total workyears. The decreases reflect a consolidation of function to one health laboratory. These decreases do not reflect a reduced work effort. The consolidation is designed to optimize use of scientific capabilities, improve programmatic support, reduce costs associated with health and safety and consolidate animal care facilities.

Health research will support the Office of Drinking Water 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. In response to the Safe Drinking Water Act Amendments, ORD will conduct research to isolate, identify, synthesize and characterize the toxicological effects of major disinfectant by-products that present the highest probable health risks.

Focus remains on the effects of disinfectants to be used as alternatives to chlorine, such as ozone and chloramine and chlorine dioxide, individually and in combined usage.

We will develop risk extrapolation methodology 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 carcinogenic health effects.

1991 Program

In 1991, the Agency is allocating a total of $5,905,000 supported by 58.2 total workyears for this program, of which $3,019,000 is from the Salaries and Expenses appropriation and $2,886,000 is from the Research and Development appropriation.

Health research is supporting the Office of Drinking Water's efforts to develop maximum contaminant levels and health advisories for chemicals found in drinking water. Researchers are developing toxicological and epidemiological data to support development of the disinfectant rule and maximum contaminant level goals. This includes research on disinfectants, disinfectant by-products and other organic and inorganic contaminants. Other research is being conducted to improve extrapolation methods used in risk assessment.

1990 Accomplishments

In 1990, the Agency obligated a total of $5,886,900 supported by 58.3 total workyears for its monitoring and quality assurance program in drinking water, of which $3,091,900 was from the Salaries and Expenses appropriation and $2,795,000 was from the Research and Development appropriation.

Major Health research accomplishments were reports on: developmental and reproductive effects of disinfectants and by-products; mechanistic approaches of interactions of drinking water contaminants; a report on the chemistry and toxicology of ozone disinfection; and evaluations of epidemiology in assessing current and future disinfection technologies for drinking water.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1992 Program Request

The Agency requests a total of $5,873,700 supported by 64.3 total workyears for this program, of which $3,660,400 will be for the Salaries and Expenses appropriation and $2,213,300 will be for the Research and Development appropriation. This represents an increase of $671,000 in the Salaries and

Expenses appropriation. This increase is requested to fund the Federal workforce needed to implement the President's program in 1992. There is a decrease of $391,100 in the Research and Development appropriation, and an increase of 11.0 in total workyears. The workyear and Salary and Expenses increases represent a strengthening of the in-house research associated with disinfectants and their by-products. The decrease in Research and Development represents a partial offset from the extramural support for disinfectants and their by-products.

Environmental engineers will evaluate processes for removing volatile organic compounds and pesticides, setting standards and implementing regulations. We will develop new information on treatment-system performance and cost analysis of proposed treatment systems. Resources also support in-house and extramural evaluation of disinfectants and their by-products and factors contributing to microbial deterioration of water quality in distribution systems. Research emphasizing technologies especially adaptable to small systems remains a priority, as do controls for corrosion by-products (i.e., lead and copper) and residual management.

ORD will evaluate processes for removing organic and inorganic contaminants and viruses from drinking water sources. Pilot-plant and field evaluations of promising technologies for removing pesticides, preventing disinfectant by-products and inorganic contaminants/radionuclides and Hepatitis A virus from groundwaters remain a priority.

Reports and data on new or improved technology for treating groundwater will be provided to states, regulatory agencies and water utilities to assist in compliance and oversight of ground-water regulations.

1991 Program

In 1991, the Agency is allocating a total of $5,593,800 supported by 53.3 total workyears for this program, of which $2,989,400 is from the Salaries and Expenses appropriation and $2,604,400 is from the Research and Development appropriation.

ORD is evaluating existing and proposed drinking water treatment systems in support of Agency regulatory decision-making. Deterioration of water quality in drinking-water distribution systems and the need to understand those factors which contribute to deterioration are focusing research on methods of control. Research on technology particularly adaptable to small systems is being emphasized.

1990 Accomplishments

In 1990, the Agency obligated a total of $4,819,000 supported by 52.2 total workyears for this program, of which $3,002,100 was from the Salaries and Expenses appropriation and $1,816,900 was from the Research and Development appropriation.

Major accomplishments included the completion of reports on, carbon-usage rates for synthetic organic compounds, point-of-entry systems for radon removal, inactivation of cryptosporidium oocysts; mobile pilot-plant studies in small communities; studies of water-cooler liner-material for the Consumer Product Safety Commission, and studies on technology performance and cost data to support

MCL standards.

ENVIRONMENTAL PROCESSES AND EFFECTS

1992 Program Request

The Agency requests a total of $7,024,100 supported by 28.2 total workyears for this program, of which $1,834,100 will be for the Salaries and Expenses appropriation and $5,190,000 will be for the Research and Development appropriation. This represents an increase of $105,200 in the Salaries and Expenses appropriation. This increase is requested to fund the Federal workforce needed to implement the President's program in 1992. This represents an increase of $1,995,000 in the Research and Development appropriation. The total workyears are increased by 1.0 workyear. These increases are for an enhanced wellhead protection program and for research on how food production/agricultural management systems affect ground-water quality.

ORD will develop methods for wellhead protection and study subsurface transport and fate. We will increase research on the impact of agricultural management practices on water quality and ecology. This new focus is being closely coordinated with the Department of Agriculture and the Geological Survey and is of heightened interest because of the potential for ground-water contamination in food/agricultural production process. We will increase the research in wellhead protection primarily for assessing the impact of multiple sources of contamination to underground water supplies, and provide increased technical assistance to the states. Support to the Underground Injection Control (UIC) Program will continue.

1991 Program

In 1991, the Agency is allocating a total of $4,923,900 supported by 27.2 total workyears for this program, of which $1,728,900 is from the Salaries and Expenses appropriation and $3,195,000 is from the Research and Development appropriation.

ORD is focusing on developing and improving methods to measure key subsurface parameters that influence contaminant behavior as well as methods that predict concentrations of contaminants. Underground Injection Control (UIC) program research is studying the fate and transport of wastes and mechanical integrity of well casings. Research supporting wellhead protection is providing data on
assimilative capacity of soils around wells and data necessary to define the area needing protection around the wellhead, as well as compiling the hydrologic data bases for the wellhead protection models.

1990 Accomplishments

In 1990, the Agency obligated a total of $5,491,900 supported by 29.9 total workyears for this program, of which $1,863,500 was from the Salaries and Expenses appropriation and $3,628,400 was from the Research and Development appropriation.

Among the accomplishments were: a research report on fixed film bioreactors for treatment of contaminated groundwaters, a report on effectiveness of use of drilling mud as a plug for injection wells, a report on field tested methods for determining the mechanical integrity of injection wells, and a report on assessing the impact of land use on ground-water quality.

**ENVIRONMENTAL PROTECTION AGENCY**

**1992 Budget Estimate**

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## DRINKING WATER
### Drinking Water Criteria, Standards & Guidelines

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| PROGRAM | | | | | | |
| Drinking Water Implementation | | | | | | |
| Salaries & Expenses | | $2,902.4 | $3,076.9 | $3,076.9 | $3,659.1 | $582.2 |
| Abatement Control and Compliance | | $4,677.9 | $5,639.3 | $5,639.3 | $6,339.3 | $700.0 |
| | TOTAL | $7,580.3 | $8,716.2 | $8,716.2 | $9,998.4 | $1,282.2 |
| Criteria, Standards & Guidelines | | | | | | |
| Salaries & Expenses | | $4,504.3 | $4,683.2 | $4,683.2 | $4,716.2 | $33.0 |
| Abatement Control and Compliance | | $6,900.2 | $6,578.0 | $6,578.0 | $5,878.0 | -$700.0 |
| Reregistration and Expedited Processing | | $534.8 | $326.4 | $326.4 | | -$326.4 |
| | TOTAL | $11,939.3 | $11,587.6 | $11,587.6 | $10,594.2 | -$993.4 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $7,406.7 | $7,760.1 | $7,760.1 | $8,375.3 | $615.2 |
| Abatement Control and Compliance | | $11,578.1 | $12,217.3 | $12,217.3 | $12,217.3 | 0.0 |
| Reregistration and Expedited Processing | | $534.8 | $326.4 | $326.4 | | -$326.4 |
| Drinking Water Criteria, Standards & Guidelines | TOTAL | $19,519.6 | $20,303.8 | $20,303.8 | $20,592.6 | $288.8 |
| PERMANENT WORKYEARS | | | | | | |
| Drinking Water Implementation | | 45.9 | 45.9 | 45.9 | 50.9 | 5.0 |
| Criteria, Standards & Guidelines | | 68.3 | 70.8 | 70.8 | 66.8 | -4.0 |
| TOTAL PERMANENT WORKYEARS | | 114.2 | 116.7 | 116.7 | 117.7 | 1.0 |
| TOTAL WORKYEARS | | | | | | |
| Drinking Water Implementation | | 46.3 | 45.9 | 45.9 | 50.9 | 5.0 |
| Criteria, Standards & Guidelines | | 75.3 | 70.8 | 70.8 | 66.8 | -4.0 |
| TOTAL WORKYEARS | | 121.6 | 116.7 | 116.7 | 117.7 | 1.0 |

# DRINKING WATER

## Drinking Water Criteria, Standards and Guidelines

### Budget Request

The Agency requests a total of $20,592,600 supported by 117.7 total workyears for 1992, an increase of $615,200 and 1.0 workyear from 1991. Of the request, $8,375,300 will be for the Salaries and Expenses appropriation and $12,217,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $615,200 for Salaries and Expenses, and an increase of 1.0 total workyear from 1991.

### CRITERIA, STANDARDS AND GUIDELINES

### 1992 Program Request

The Agency requests a total of $10,594,200 and 66.8 total workyears for this program, of which $4,716,200 will be from the Salaries and Expenses appropriation and $5,878,000 will be from the Abatement, Control and Compliance appropriation. Of the total workyears, 65.8 will be supported by the Salaries and Expenses appropriation and 1.0 will be supported by the Reregistration and Expedited Processing Revolving Fund. This represents an increase of $33,000 in the Salaries and Expenses appropriation, a decrease of $700,000 in the Abatement, Control and Compliance appropriation, and a decrease of 4.0 total workyears. The decreases reflect reduced needs in regulatory development and the completion of the National Pesticides Survey.

In 1992, the program will continue to emphasize regulatory development for toxic-chemical contaminants as mandated in the 1986 SDWA Amendments. EPA will publish the final regulation establishing Maximum Contaminant Level Goals (MCLGs) and National Primary Drinking Water Regulations (NPDWRs) for 24 inorganic and synthetic organic chemicals (Phase V Rule). The review process for the proposed Radionuclides Rule will be ongoing with promulgation scheduled for early FY 1993.

Work will continue on final development of Disinfectants/Disinfection By-Products Rule. The Phase VIB Rule, which sets standards for contaminants from the First Drinking Water Priority List, will be under proposal. Standard setting for arsenic will proceed based on the outcome of technical assessment of available data.

The program will continue to provide guidance and technical assistance to Regions, state and local officials, and public water systems. In 1992, EPA will provide rule interpretation and technical advice on the Surface Water Treatment Rule, Total Coliform Rule, and the Lead and Copper Rule. The university based pollution prevention program will provide training on implementation of Lead/Copper Corrosion Control requirements. The program will also distribute public education materials designed to reduce exposure to lead in drinking water. The program will continue to develop and update Health Advisory Guidance

Documents which disseminate current information on short-term as well as long-

term effects of drinking water contaminants. The Advisories are used by Federal, state, and local officials in responding to drinking water contamination.

In 1992, EPA will continue to participate in conferences and workshops on drinking water issues. The Agency will have a major role in the World Health Organization (WHO) revision of international drinking water guidelines, and will participate in WHO and other international conferences. At these meetings, EPA shares technical expertise with less developed countries and assists in the worldwide improvement of drinking water. In turn, the Agency gains valuable information on international research findings.

Resources from the Reregistration and Expedited Processing Revolving Fund will support Agency implementation of the 1988 Amendments to the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA '88). The Amendments prescribe a detailed reregistration process designed to review older registered pesticide chemicals. The program will analyze reregistration data for those chemicals found to pose a threat of drinking water contamination and will integrate the data into comprehensive documents that provide an independent evaluation of the health risks posed by each pesticide.

1991 Program

In 1991, the Agency is allocating $11,587,600 supported by 70.8 total workyears for this program, of which $4,683,200 is from the Salaries and Expenses appropriation, $6,578,000 is from the Abatement, Control and Compliance appropriation and $326,400 is from the FIFRA Revolving Fund. Total workyears include 69.8 supported by the Salaries and Expenses appropriation and 1.0 supported by the FIFRA Revolving Fund.

The Agency continues to make progress with regard to regulatory development. Standards for inorganic and synthetic organic chemicals are being promulgated. The program is preparing for the proposal of the Radionuclides Rule. A standardized monitoring framework, which simplifies and synchronizes the monitoring that systems are required to perform, is also being published. Also under preparation in 1991 is the Disinfectant/Disinfection By-Products Rule. Revisions to the Lead and Copper Rule are being promulgated, and the Second Drinking Water Priority List was published. The Agency is publishing the results of studies on revising the standards for fluoride. Also underway is the technical assessment of available data on arsenic.

EPA is also assisting Regions and states with implementation of the Lead Contamination Control Act. A new initiative is the university-based pollution prevention program which will provide training on implementation of the Lead/Copper Corrosion Control Rule. Public education material is being developed and distributed with the aim of reducing the public's exposure to lead. Information on the health risks associated with indoor radon is being produced. A number of Health Advisories are being produced this year. The National Pesticide Survey, completed in 1990, provides a comprehensive picture of the prevalence and extent of a wide range of pesticides and nitrates in drinking water wells. In 1991, the program is publishing the survey findings.

The FIFRA-mandated pesticide reregistration process requires analysis of

pesticide chemicals. Other ongoing activities include assisting the WHO in revising drinking water guidelines, representing the U.S. in the International Agency for Research on Cancer, and providing support and participating in bilateral meeting with the Budapest Environmental Center.

1990 Accomplishments

In 1990, the Agency obligated $11,939,300 and 75.3 total workyears for this program, of which $4,504,300 and 74.7 total workyears were from Salaries and Expenses and $6,900,200 was from Abatement, Control and Compliance. In addition, 0.6 total workyear and $534,800 were funded from the FIFRA Revolving Fund.

The Agency proposed the regulation establishing MCLGs and NPDWRs for 24 inorganic and synthetic organic chemicals (Phase V Rule). EPA also completed field work for the National Pesticide Survey. The FIFRA Revolving Fund supported work on review of pesticide data from the FIFRA reregistration process. EPA had a major role in various conferences and workshops on drinking water issues. The program produced several Health Advisories. EPA continued its program to reduce public exposure to lead in drinking water. Outreach efforts included assistance to schools throughout the nation to aid in the detection and remedy of lead contamination. The program published a list of water coolers failing to meet EPA lead criteria. The program provided technical support to the Consumer Product Safety Commission in developing an agreement with a major water cooler manufacturer to recall water coolers that fail to meet the lead criteria.

DRINKING WATER IMPLEMENTATION

1992 Program Request

The Agency requests a total of $9,998,400 supported by 50.9 total workyears in 1992. Of the total request, $3,659,100 will be for the Salaries and Expenses appropriation and $6,339,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of 5.0 total workyears, an increase of $582,200 in the Salaries and Expenses appropriation, and an increase of $700,000 in the Abatement, Control and Compliance appropriation. The increase in Salaries and Expenses reflects increased personnel and support costs. The majority of the increase in workyears and all of the increase in Abatement, Control and Compliance funds will support increased mobilization activities, particularly to expand local involvement in drinking water issues. An aggressive mobilization effort is critical to ensure that the States retain primacy and the SDWA requirements are carried out.

Extramural resources will be used to improve and modernize Public Water System (PWS) information systems. Headquarters will enhance accessibility by a wider range of users, take advantage of the expanded electronic data transfer capabilities, and include data collected under new regulations or requirements. Geographic Information System data will be improved with emphasis on targeting latitudinal/longitudinal data for wells and intake points in the current system. In addition, EPA will develop a new data verification protocol and will oversee Regional testing of the protocol.

The budget request also includes a transfer of one total workyear from the

Resource Conservation and Recovery Act regulatory program to help support the hazardous waste injection well program. This shift of resources will allow for better integrated management of the disposal of hazardous waste into injection wells.

In 1992, Headquarters will continue to focus on improving the nationwide implementation of the Safe Drinking Water Act Amendments. In the coming decade, State and local governments will face greater implementation responsibilities as the increasing number of regulated contaminants will be accompanied by broader, more complex, and more costly implementation challenges. EPA will continue mobilization strategies and technology transfer activities with the specific aim of assisting the State and local governments in meeting these challenges. In particular, mobilization efforts will focus on the local level, where support is critically needed to ensure the compliance of small systems.

Of special concern are small public water systems which have chronic compliance problems because they typically face low revenues, poor financial and managerial capabilities, insufficient technical knowledge and unfavorable economies of scale in treatment processes. Over 90% of violations occur within small systems. An important focus in 1992 will be the strengthening of local involvement to protect public water systems and improve underground injection control. Training and on-site technical assistance will be provided. The program will promote the use and acceptance of lower cost technologies among small drinking water systems. As part of the effort to enhance local involvement, EPA will develop informational materials for use by local entities in dealing with problems unique to small systems, private wells and high priority shallow injection wells.

Headquarters will continue engaging all parties with a stake in safe drinking water in increasing the capability of all systems. EPA will continue its partnerships with the numerous national organizations who recognize the importance of full implementation. Strategies include public outreach, public-private partnerships in demonstrating new low-cost technologies, improving State funding and program capabilities, and promoting institutional change to ensure the viability of new small systems and the restructuring of existing small systems.

One aspect of mobilization is to help the public understand the health benefits of full implementation of the drinking water regulations. Based on extensive analysis, EPA estimates that full implementation of the drinking water regulations will result in an annual avoidance of 400,000 cases of gastrointestinal illness, 400 deaths due to gastrointestinal illness, and 180 cases of cancer. In addition, full implementation will bring blood lead levels of over 500,000 children per year below the level associated with neurological development problems.

State and local governments currently lack the capability to carry out the expanding SDWA requirements. EPA will continue with mobilization activities designed to strengthen State primacy, encourage local involvement, and heighten public awareness and involvement.

EPA will continue to provide program oversight to the primacy States.

Headquarters will issue guidance to the States and will review subsequent State regulations as they adopt the 38 Inorganic and Synthetic Organic Chemical rule and the Lead and Copper rule. Thorough and expedited review will ensure continuation of State primacy. EPA will also continue outreach and assistance efforts to assist Indian tribes in qualifying for primacy for the PWS and Underground Injection Control (UIC) programs.

Revisions to Class II regulations will be under proposal. EPA will also work with the States and industry to develop solutions, including demonstration projects, to prevent contamination of ground water, particularly in sensitive watershed areas, from shallow injection practices.

EPA will initiate an integrated approach to source assessment and control for ground water source PWS systems using expanded comprehensive program evaluations. EPA will assist States in conducting vulnerability assessments whereby determinations are made regarding whether systems' water sources are vulnerable to certain contaminants. Source protection strategies will encompass watershed and wellhead protection techniques.

1991 Program

In 1991, the Agency is allocating a total of $8,716,200 supported by 45.9 total workyears for this program. Of the total, $3,076,900 is from the Salaries and Expenses appropriation and $5,639,300 is from the Abatement, Control and Compliance appropriation.

In 1991, the program continues to work toward national implementation of SDWA standards. Headquarters is issuing draft guidance on regulatory variances and exemptions and is reviewing state regulations for the eight VOCs and the public notification requirements. The program is also reviewing state adoptions of the Surface Water Treatment Rule and the Total Coliform Rule. The program is working with the states to assist them in maintaining primacy, as many states are asking for extensions in rule adoption.

Implementation documents for Regions, state and local officials, and public water systems are being developed. The program is preparing new procedures for states to use in determining and facilitating compliance of water systems. The program is also studying the feasibility of using test kits for simplified monitoring.

The UIC Headquarters program is currently refining regulations for oil and gas production (Class II) wells through regulatory negotiation. In addition, a regulation addressing shallow (Class V) wells is under development, and the program is producing information brochures and a training handbook to assist Indian tribes seeking primacy for the PWS and UIC programs.

Headquarters continues to assist states in building state capacity by working with national and private organizations to provide technical and managerial assistance and training to system owners and operators. The Agency also works with states in developing funding options to support their programs.

1990 Accomplishments

In 1990, EPA obligated $7,580,300 supported by 46.3 total workyears for this program, of which $2,902,400 was from the Salaries and Expenses appropriation and $4,677,900 was from the Abatement, Control and Compliance appropriation.

During 1990, the program continued to facilitate implementation of drinking water regulations. The program developed guidance and assistance documents for the Regions, states, and public water suppliers. In particular, the program developed a primacy guidance manual to assist the states in overall adoption of new requirements. The program developed a strategy to facilitate Indian primacy. A guidance manual on the Surface Water Treatment Rule was issued. Other publications developed in 1990 include a revised laboratory certification manual, a document on available technology for meeting drinking water standards, and guidance on determining exemption and variance eligibility. EPA issued a water supply guidance manual which presented a compilation of EPA water supply policy. The Drinking Water Hotline responded to over 30,000 calls. The program managed thirteen demonstration projects for solving Class V well problems through local involvement. The program provided outreach and technical interpretation and assistance on various regulatory issues throughout the year.

Mobilization proved to be an effective tool in strengthening state capacity, fostering drinking water expertise at the local level, and promoting state and local program coordination. In 1990, eight states increased their drinking water resources, while several states worked toward building specific state capacity functions. EPA conducted several demonstration projects in cooperation with both traditional and nontraditional groups and associations. The program prepared reports to assist small systems with institutional problems and developed long term training strategies for the PWS program. The program engaged two health associations in an information transfer and training program for local health officials.

## DRINKING WATER
### Drinking Water State Program Resource Assistance

| PROGRAM | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| Public Water Systems Supervision Program Grants | | | | | | |
| Abatement Control and Compliance | | $38,521.7 | $47,450.0 | $47,450.0 | $49,950.0 | $2,500.0 |
| | TOTAL | $38,521.7 | $47,450.0 | $47,450.0 | $49,950.0 | $2,500.0 |
| Underground Injection Control Program Grants | | | | | | |
| Abatement Control and Compliance | | $9,913.0 | $10,500.0 | $10,500.0 | $10,500.0 | 0.0 |
| | TOTAL | $9,913.0 | $10,500.0 | $10,500.0 | $10,500.0 | 0.0 |
| Special Studies & Demonstrations | | | | | | |
| Abatement Control and Compliance | | $4,373.6 | $4,650.0 | $4,650.0 | $500.0 | -$4,150.0 |
| | TOTAL | $4,373.6 | $4,650.0 | $4,650.0 | $500.0 | -$4,150.0 |
| TOTAL: | | | | | | |
| Abatement Control and Compliance | | $52,808.3 | $62,600.0 | $62,600.0 | $60,950.0 | -$1,650.0 |
| Drinking Water State Program Resource Assistance | TOTAL | $52,808.3 | $62,600.0 | $62,600.0 | $60,950.0 | -$1,650.0 |

## Drinking Water State Program Resource Assistance

Budget Request

The Agency requests a total of $60,950,000 for 1992, a decrease of $1,650,000 from 1991. All of the request will be for the Abatement, Control and Compliance appropriation.

### PUBLIC WATER SYSTEMS SUPERVISION PROGRAM GRANTS

1992 Program Request

The Agency requests a total of $49,950,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of $2,500,000 from 1991. The increase will provide States with increased capacity to address compliance with new and existing regulations and effective implementation of an expanded drinking water regulatory program.

Drinking water programs are implemented and enforced with the objective of protecting human health. Federal and state responsibilities have been revamped through the Federal/state alliance and greatly expanded in both the traditional drinking water program and newly mandated requirements. As a result, states need increased funding not only to carry out the new requirements, but also to maintain their current programs and achievements.

States are facing serious funding and capacity shortfalls as indicated by a recent report conducted to determine current and future resource needs to implement the SDWA requirements. Since the study was completed, changes in regulation development may have slightly reduced estimated implementation costs in 1992. The report concluded that approximately $129 million per year is needed to meet current program requirements of which only an estimated $95 million per year (including Federal resources) is currently being funded. Implementation of the new requirements will cost states an additional $180 million in initial one-time start up costs expended between 1987 and 1992. It is estimated that an additional $150 million (beyond the current need of $129 million) will be needed in 1992, bringing the total estimated need to $279 million. At the requested level of funding, Federal support will increase to 18 percent of program need, based on these estimates.

States are actively seeking additional resources and the necessary statutory/regulatory authorities to meet the new SDWA requirements. The Agency may use a portion of the funds allocated to primacy states that have requested an extension or adopted the necessary statutory/regulatory authorities to implement new requirements in order to assure at least minimal compliance with new requirements in these states.

Additional support to state programs is intended to help the states defray the costs of the new duties entailed by these regulatory changes and work towards successfully implementing the new program requirements. The agency intends to accomplish three other objectives: (1) 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; (2) facilitate mobilization and technology-transfer activities at the state level; and (3) maintain compliance with existing program requirements and enforce the new requirements as they become effective. These efforts seek to prevent loss of current program achievements in compliance and, at the same time, reach new goals through rigorous enforcement of the new requirements.

Pursuant to the surface water treatment rule (SWTR), states will continue detailed evaluation of each of the 9,200 surface-source community and non-transient non-community public water systems (PWSs) in order to determine specific treatment and performance requirements. These evaluations entail consultation with each system and public hearing opportunities as well as extensive technical evaluation. Priority will be on evaluating the 4,000 systems with no filtration facilities in place now. All 200,000 PWSs will be operating under a revised microbiological monitoring regimen under the microbiological National Primary Drinking Water Regulation (NPDWR). This monitoring regimen will emphasize increased monitoring where contamination is detected, focusing on systems with actual contamination problems as they occur.

This request includes $625,000 for travel to support EPA's direct implementation activities or enforcement actions in non-primacy states and in states that have not acquired the necessary statutory/regulatory authorities to implement the new drinking water requirements.

1991 Program

In 1991, the agency is allocating a total of $47,450,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

PWS grants support 55 state primacy programs, two EPA direct implementation programs and programs on Indian lands that together comprise the nationwide protection program. Grant funds provide for laboratory certification, on-site evaluations and technical assistance, sanitary surveys, and compliance and enforcement actions. States and EPA assist communities and systems affected by continuing incidences of contamination by toxic chemicals and outbreaks of giardiasis, cholera, and hepatitis. Systems in violation of National Primary Drinking Water Regulations (NPDWRs) either receive technical assistance to bring them into compliance or are placed on formal compliance schedules. Compliance/enforcement priorities are structured to eliminate all significant noncompliers (SNC) and target exception systems for formal enforcement action. The states and EPA have begun implementation of microbiological, surface water treatment and volatile organic contaminant (VOC) requirements. Also, states are implementing a lead NPDWR and the lead ban requirements. Indian tribes are being assisted in qualifying for treatment as states and applying for development grants. Grant funds are used to support EPA direct implementation activities, including travel.

States are actively seeking additional resources and the necessary statutory/regulatory authorities to meet the new SDWA requirements. The Agency may use a portion of the funds allocated to primacy states that have not yet

acquired the necessary statutory/regulatory authorities to implement new requirements in order to assure at least minimal compliance with new requirements in these states.

States are aggressively pursuing institutional changes that will enable them to address their small systems problems. They are beginning to seek the legal authority and state regulations required to ensure that new small systems are able to meet the technical, financial and managerial requirements of future regulations.

1990 Accomplishments

In 1990, the Agency obligated a total of $38,521,700 for this program, all of which was from the Abatement, Control and Compliance appropriation.

The PWS grant program 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. Funds were also used to support EPA direct implementation activities for the drinking water program, including travel associated with these activities.

States supervised compliance with drinking water regulations, revised their legal authorities to accommodate new Maximum Contaminant Levels, expanded state laboratory certification capability, and provided assistance in monitoring for regulated and unregulated contaminants. States continued the emphasis on system compliance and took action against violations of drinking water standards. EPA assisted approximately 40 states to adopt new requirements for microbiological contaminants standards and the surface water treatment rule. Enforcement continued to ensure implementation of the ban on lead-content plumbing materials. In addition, states continued to enforce the public notification requirements and maximum contaminant levels for VOCs. Indiana was provided grant support to continue development of its PWS program to qualify for primacy. The second year of a PWS program development grant was awarded to an Indian tribe to develop a suitable PWS program to qualify for primacy designation.

UNDERGROUND INJECTION CONTROL PROGRAM GRANTS

1992 Program Request

The Agency requests a total of $10,500,000 for this program, all of which will be from the Abatement, Control and Compliance appropriation. This represents no change from 1991.

UIC grants will continue to 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. Where states and Indian tribal authorities have failed to assume UIC primacy, EPA will use grant allotments to support direct implementation of Federal UIC requirements, including a total of $375,000 in travel to support EPA's direct implementation activities.

Forty states will have primacy for 36 full and four partial programs. EPA will implement the remaining state programs (17 full and four partial) and programs on most Indian lands. Indian tribes approved as eligible to assume primacy may apply for grants to establish a UIC program.

States/Regions will issue or deny new permits, evaluate appeals on previous denials, and review applications to modify existing permits, including hazardous waste Class I well petitions. In assuring that permit conditions are being met, the states/Regions will review monthly, quarterly, and annual reports from operators and conduct inspections. The states/Regions will supervise injection practices in the field by witnessing mechanical integrity tests, inspecting and reviewing plugged and abandoned injection wells, reviewing well records, and tracking compliance with regulatory requirements and permit conditions. The states will implement the enforcement role through field presence and by initiating appropriate enforcement actions.

States/Regions will initiate programs to address contamination problems from shallow injection wells. Since 1987, 63 confirmed cases of contamination posing human health threats or environmental threats have been identified. Contaminants such as benzene, organic solvents, and other toxic chemicals are found in fluids injected in these wells.

States/Regions, working with local jurisdictions, will initiate an active program to locate and assess priority shallow wells, such as some industrial drainage wells and automobile service station wells that are located in vulnerable watershed areas, unsewered locations, and those in proximity to drinking water wells to determine whether they should be reclassified as Class IV wells and closed. Where the risk of endangerment to USDWs is lower, as in Class V wells, they will utilize a multifaceted protection approach. In addition to the traditional regulatory efforts, such as requiring facilities to be permitted and initiating enforcement actions, they will also use innovative non-regulatory approaches involving public-private partnerships, outreach and education, and community action. States/Regions will adopt the approaches that proved successful in demonstration projects previously funded and best management practices already available at the state and local levels to promote voluntary protection efforts. When Class IV wells are identified, states and Regions will require immediate closure, through an enforcement action, should the facility owners fail to comply.

1991 Program

In 1991, the Agency is allocating a total of $10,500,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

UIC grants support 40 states, 36 full and four partial, with primacy. EPA is responsible for implementing programs in the remaining states. Grant funds support basic program operations such as compliance evaluations of existing wells to ensure mechanical integrity, conducting field inspections, data management and enforcement. The grant funds also support technical assistance to operators, maintain well inventory data, and support regulatory changes to accommodate new EPA requirements and guidelines. The Agency provides grants to Indian tribes working toward primacy, and continues to implement the program on Indian lands and in non-primacy states. During 1991, Indian tribes that are eligible to assume primacy may apply for grants to establish a UIC program. Activities

include conducting an inventory to determine the number and types of wells to be regulated and establishing the framework for the permitting and enforcement programs. The Agency uses a portion of the grant funds for travel related to direct implementation activities.

States and Regions are enhancing their Class IV and V well efforts by following the Agency's Shallow Injection Well Strategy. This strategy, combining traditional regulatory efforts and innovative non-regulatory approaches to protect drinking water sources and other critical ground waters, complements the Agency's Wellhead Protection efforts. EPA's Toxic Characteristic Leaching Procedure (TCLP) rule has a major impact. To address "high risk" shallow injection wells, the states and EPA are contacting owners/operators to solicit information to determine whether they are subject to closure. Many wells that inject service station, industrial process and radioactive disposal wastes are being re-classified into the banned Class IV category. States are initiating closure, remediation and enforcement actions against these wells. The results of EPA funded projects to demonstrate effective state approaches in addressing specific categories of Class V wells are being provided to all states for inclusion in their individual comprehensive ground water protection programs and will be used in support of regulatory development covering these wells.

States and Regions continue to permit new Class I and Class II wells and repermit Class I wells. States and Regions continue compliance reviews to ensure that safeguards on all permitted or rule-authorized Class I, II, III, and permitted Class V wells are comprehensively evaluated on a regular basis. EPA and state programs are implementing revisions to existing UIC regulations and programs for Class II wells based on the 1989-1990 mid-course evaluations. In addition, EPA and the states continue to observe on-site mechanical integrity tests, inspect and review plugged and abandoned wells, review well records, and track compliance with regulatory requirements and permit conditions.

Administrative Orders (AOs) and/or legal actions are being initiated by state programs against owners and operators in violation of UIC regulatory requirements. This includes preparing public notification of violation and intent to issue Aos, and conducting public hearings.

1990 Accomplishments

In 1990, The Agency obligated a total of $9,913,000 for this program, all of which was from the Abatement, Control and Compliance appropriation.

These funds supported 36 full and four partial primacy programs to protect USDWs from contamination through underground injection. EPA used grants to support direct implementation activities for 17 full non-primacy and four partial non-primacy states and Indian lands. A top priority for EPA and the states was the permitting of new Class II wells in order to expedite oil and gas production and repermitting of hazardous waste Class I wells. Under existing regulations, such as the Agency's TCLP rule, EPA increased efforts to bring enforcement and/or regulatory action against Class IV and V wells which endangered USDWs serving public water supplies. A $1,000,000 set-aside funded demonstration projects selected to provide information to support Class V regulatory and guidance development.

Grants also supported surveillance and compliance activities. The program's primary means of surveillance was through field inspections and the review of reports submitted by operators. One important component was periodic testing of the mechanical integrity of injection wells to demonstrate the absence of contamination sources. Where violations were evident, appropriate enforcement actions were initiated.

The states and EPA completed 9,153 permit determinations for new and existing wells and conducted evaluations to determine if permit requirements were being met. In addition, 35,741 mechanical integrity tests were conducted to ensure the integrity of wells. The states and EPA also focused on compliance activities through increased field inspections and enforcement actions. Other activities included the review of monitoring reports and maintenance of inventory data.

## SPECIAL STUDIES AND DEMONSTRATIONS

### 1992 Program Request

The Agency requests a total of $500,000 for this program, all of which will be from the Abatement, Control and Compliance appropriation. This represents a decrease of $4,150,000 from 1991. This decrease reflects the Agency's effort to achieve maximum leverage with limited resources. It is the Agency's position that the recipient organizations should secure additional funding through organizational dues, training fees and other mechanisms, and is not a Federal responsibility.

In 1992, the Special Studies and Demonstration program will continue to provide support for training and technical assistance to small rural systems through the National Rural Water Association (NRWA) and the National Rural Community Assistance Program (NRCAP) affiliates. These activities include one-on-one technical assistance in the areas of preventative maintenance, facility operations, management and finance. NRCAP programs will provide public water systems with up-front management assistance in the areas of locating financial assistance and day-to-day accounting operation. Training and technical assistance will help owners and operators of rural water systems achieve and maintain compliance with the NPDWRs as mandated by the Safe Drinking Water Act Amendments. The goal is to promote system compliance with the NPDWRs by enhancing the system's physical infrastructure and ability to generate new revenue sources.

### 1991 Program

In 1991, the Agency is allocating a total of $4,650,000 for this program, all of which is from the Abatement, Control and Compliance appropriation. These funds provide $3,700,000 to the NRWA, $700,000 to the NRCAP, and $250,000 to the National Environmental Training Centers.

Through the NRWA and the NRCAP, EPA provides training and technical assistance to small water suppliers. EPA funds 45 independent, non-profit state associations covering 47 states through agreements with the NRWA. EPA funds six regional non-profit rural water community organizations through agreements with the NRCAPs.

EPA provides funding to state 109(B) Environmental Training Centers and to the National Environmental Training Association (NETA). State 109(B) Environmental Training Centers provide drinking water technical assistance, training and information directly to state personnel.

Congressional Directives. A total of $3,650,000 is for the Congressionally directed projects with the National Rural Water Association, the National Rural Community Assistance Program, and the National Environmental Training Association.

1990 Accomplishments

In 1990, the Agency obligated a total of $4,373,600 for these programs, all of which was from the Abatement, Control and Compliance appropriation. These funds included $391,000 for the NRCAP to foster small system compliance; $278,000 to support state 109(b) environmental training centers; $92,600 to NETA; $3,212,500 to the NRWA to provide training and technical assistance to support small system compliance; and $399,500 to six states to develop Pilot State Compliance Assurance Plans.

EPA provided funding to six states to develop Pilot State Compliance Assurance Plans. These comprehensive plans will establish a framework in these states to maximize the effectiveness of all parties involved with public water supply by developing action-oriented partnerships, coordinating activities, and leveraging resources to promote public water system compliance.

The NRWA and its 45 state affiliates conducted a total of 641 technical assistance and training programs including: 221 technical seminars; 364 technical training sessions; 22 jointly sponsored specialized training sessions with other state and Federal Agencies; and 34 problem solving sessions. In addition, NRWA affiliates provided a total of 14,692 hours of on-site technical assistance to address individual rural water system problems related to compliance, operations and maintenance, finance and management.

In 1990, EPA supported six RCAP organizations through a grant to the NRCAP. These organizations helped to improve the management capabilities and financial management through technical assistance to 52 small community drinking water systems in 12 states. RCAP projects included an assistance program to help small systems apply for loans and grants, a resources clearinghouse project to compile a manual of all available funds within a state and the development of training information for small water systems.

## DRINKING WATER
### Drinking Water Management

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| PROGRAM | | | | | | |
| Public Water Systems Supervision Program Assistance | | | | | | |
| Salaries & Expenses | | $5,759.5 | $7,271.2 | $7,270.8 | $8,952.3 | $1,681.5 |
| Abatement Control and Compliance | | $661.5 | $10.0 | $10.0 | $10.0 | 0.0 |
| | TOTAL | $6,421.0 | $7,281.2 | $7,280.8 | $8,962.3 | $1,681.5 |
| Underground Injection Control Program | | | | | | |
| Salaries & Expenses | | $5,695.0 | $6,476.0 | $6,476.0 | $7,173.4 | $697.4 |
| Abatement Control and Compliance | | $972.0 | | | | 0.0 |
| | TOTAL | $6,667.0 | $6,476.0 | $6,476.0 | $7,173.4 | $697.4 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $11,454.5 | $13,747.2 | $13,746.8 | $16,125.7 | $2,378.9 |
| Abatement Control and Compliance | | $1,633.5 | $10.0 | $10.0 | $10.0 | 0.0 |
| Drinking Water Management | TOTAL | $13,088.0 | $13,757.2 | $13,756.8 | $16,135.7 | $2,378.9 |
| PERMANENT WORKYEARS | | | | | | |
| Public Water Systems Supervision Program Assistance | | 114.7 | 152.0 | 152.0 | 170.6 | 18.6 |
| Underground Injection Control Program | | 124.8 | 133.1 | 133.1 | 136.7 | 3.6 |
| TOTAL PERMANENT WORKYEARS | | 239.5 | 285.1 | 285.1 | 307.3 | 22.2 |
| TOTAL WORKYEARS | | | | | | |
| Public Water Systems Supervision Program Assistance | | 121.2 | 157.6 | 157.6 | 170.6 | 13.0 |
| Underground Injection Control Program | | 131.8 | 141.7 | 141.7 | 136.7 | -5.0 |
| TOTAL WORKYEARS | | 253.0 | 299.3 | 299.3 | 307.3 | 8.0 |

## Drinking Water Management

### Budget Request

The Agency requests a total of $16,135,700 supported by 307.3 total workyears for 1992, an increase of $2,378,900 and 8.0 total workyears from 1991. Of the request, $16,125,700 will be for the Salaries and Expenses and $10,000 will be for the Abatement, Control and Compliance appropriation. This represents increases of $2,378,900 for the Salaries and Expenses appropriation and 8.0 total workyears. There is no change in the Abatement, Control and Compliance appropriation from 1991.

### PUBLIC WATER SYSTEMS SUPERVISION PROGRAM ASSISTANCE

### 1992 Program Request

The Agency requests a total of $8,962,300 supported by 170.6 total workyears for this program, of which $8,952,300 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 $1,681,500 for Salaries and Expenses and 13.0 total workyears, and no change in Abatement, Control and Compliance. The increase in Salaries and Expenses and total workyears will enhance state program implementation efforts.

Regional resources will be used to further establish the essential link between all parties involved in drinking water by actively encouraging states to take on the role of "marketing" the new requirements across the entire regulated community. In addition, Regions will assist states in expanding the capability of their programs, through (1) strategy development to address state resource needs as well as institutional barriers to successful program implementation; and (2) consultations on state initiated legislation to facilitate improved support for state programs and water supplies. The Regions will maximize voluntary compliance by working with third parties through public education, public/private partnerships and information transfer on treatment technologies.

Regions will work with states on the adoption of lead/copper corrosion control and inorganic and synthetic organic contaminants standards. Regions will focus on state implementation of the filtration and disinfection requirements for surface water systems and revised microbiological contaminant standards. Some states will experience difficulty in adopting the new provisions and in maintaining primacy of their drinking water programs. In these situations, through Memoranda of Understanding (MOUs) with the states, EPA will undertake essential activities in order to assure at least minimal compliance with the new requirements in these states. Where Regions have direct implementation responsibility, including most Indian lands, the Regions will implement new requirements and work with Indian tribal authorities to develop supervision programs. Regional data management responsibilities will escalate as a result of increased reporting on system compliance requirements. The Regions will provide technical assistance on the lead testing protocol and remedial action guidance for lead contaminated drinking water.

In 1992, the Regions will seek to expand the Federal/state alliance where appropriate to include local governments to further assist drinking water program implementation. The Regions will work with states and national organizations of local governments to gain support and encourage an evolution of a recognized and accepted role of local governments to support implementation of drinking water requirements.

Most often, local governments are willing to take on a recognized role but are hindered by a lack of technical information and limited resources. Demonstration and pilot projects will be supported with interested states and local governments willing to share implementation activities, formal delegation of enforcement, technical assistance, system inspections, information dissemination and other activities. These projects are expected to demonstrate that local government officials along with states can play a major role in improving compliance by motivating and educating small drinking water systems. National and regional organizations of local governments will receive support for demonstration projects to build state and local partnerships, technical information transfer and outreach activities.

1991 Program

In 1991, the Agency is allocating a total of $7,280,800 supported by 157.6 total workyears for this program, of which $7,270,800 is from the Salaries and Expenses appropriation and $10,000 is from the Abatement, Control and Compliance appropriation.

The Regions oversee states' efforts in adopting requirements for lead/copper and inorganic and synthetic organic contaminant standards. Regional oversight also focuses on state activities to implement filtration/disinfection requirements for surface water systems and revised microbiological contaminant standards. The Regions continue to encourage states to improve compliance by eliminating violations of the National Primary Drinking Water Regulations (NPDWRs) through use of available tools and escalating actions as needed. For those states experiencing difficulty in adopting the new provisions and in maintaining primacy of their drinking water programs, the Regions directly implement the new program requirements after negotiating workload requirements with the states. Where Regions have direct implementation responsibility, including most Indian lands, they also assume the expanded duties.

Regional mobilization and technology transfer efforts help reach the vast number of small water systems which are the prevailing noncompliance problem. The Regions assist states in establishing fee systems and bond programs to build their state program capacity and address prospective high risks posed by private wells through outreach and information transfer programs. To address small system problems, the Regions are actively encouraging states to adopt program requirements to ensure system viability and removing small system technology and institutional barriers. Technical assistance is provided to identify and remedy lead contaminated drinking water in schools, to ban lead content-plumbing supplies, and to implement corrosion control.

1990 Accomplishments

In 1990, the Agency obligated a total of $6,421,000 supported by 121.2 total workyears for this program, of which $5,759,500 was from the Salaries and Expenses appropriation and $661,500 was from the Abatement, Control and Compliance appropriation.

During 1990, the Regions worked with states in adopting the surface water treatment rule and revised standards for microbiological contaminants. Regions worked with primacy states to incorporate regulatory and monitoring requirements needed to enforce the revised standards for volatile organic contaminants and public notification requirements. Efforts continued in overseeing the prohibition of lead-content plumbing materials and enforcing the other existing rules.

The program continued to track state compliance monitoring to locate and assist with problem systems and respond to contamination of supplies and waterborne disease outbreaks. The Regions assisted states in adopting new analytical techniques to meet additional laboratory certification requirements. The program continued to provide oversight of basic state program operations and conducted evaluations of state drinking water programs.

The Regions reviewed and approved 40 state primacy revision applications. Seminars were conducted for the states on implementing the surface water treatment and coliform requirements, with eight states formally adopting these requirements. Regions continued to provide states with assistance in increasing their program capacity to meet future drinking water requirements.

The Regions conducted workshops to train Indian tribes on qualifications for treatment as a state, the grant application process and primacy responsibilities. Significant assistance was given to Indiana to build an adequate Public Water System (PWS) program to quality for primacy by late 1991.

UNDERGROUND INJECTION CONTROL PROGRAM

1992 Program Request

The Agency requests a total of $7,173,400 supported by 136.7 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of $697,400 and a decrease of 5.0 workyears. The increase in Salaries and Expenses reflects increased personnel and support costs. The decrease in workyears represents a decrease in program activities from Class I & III wells and from Class II wells in direct implementation states.

In 1992, EPA will continue to implement 21 Federal Underground Injection Control (UIC) programs (17 full and four partial) in states and on Indian lands which do not have primacy. Direct implementation activities will focus on making permit determinations as well as ensuring adherence to permit conditions and other regulatory requirements by conducting field inspections, witnessing mechanical integrity tests, and reviewing well record reports. Regions will continue to review primacy applications, and provide guidance and grants as appropriate.

The Regions will oversee 40 primacy State programs (36 full and four partial programs). EPA will provide technical assistance to primacy states and ensure that the programs continue to meet the minimum regulatory requirements. The Agency will continue to review state-issued permits to ensure that Federal and state requirements are met. Regions will conduct state oversight and will continue to emphasize full inspections of Class II wells for adequate well construction and to witness mechanical integrity tests to prevent contamination.

State UIC agencies will work closely with local jurisdictions to encourage them to assist in implementing environmental regulations. Local officials will be encouraged to actively participate in addressing diffuse types of contamination associated with shallow injection wells through grassroots efforts to identify and close unsafe shallow injection practices, consider the environmental and health implications of approving these practices and best management practices as part of their land use planning process, etc. Regions will participate in the design and implementation of demonstration projects. They will assist states in developing a cooperative arrangement at the local level.

Urbanization and unprecedented growth are threatening our water resources through runoff of nutrients and toxic chemicals. Shallow wells and septic systems often occur in urbanized areas as an alternative to connections to sewage treatment facilities. Contamination of watershed areas occurs from these sources through interconnections with surface waters. Shallow injection wells will be targeted using a wellhead protection approach and using the information obtained from vulnerability assessments that are being mandated under the public water system supervision program. Coordinated field investigations with the ground-water, Superfund, and Resource Conservation and Recovery Act (RCRA) programs will be initiated to determine whether the facility is in violation of regulations and the appropriate course of action taken. There are estimated to be over 200,000 shallow injection wells and approximately 10% of these may be Class IV wells under the new Toxic Characteristic Leaching Procedure (TCLP) which will therefore require closure; others may require a permit as a Class V facility and still others may be targets for enforcement actions. EPA will seek increased local participation to achieve voluntary remedial/closure action. Activities will be coordinated with other nonpoint source programs that impact the targeted area.

Regions will review applications from Indian tribes to determine their qualifications for treatment as a state and their eligibility for primacy. For those Indian tribes applying for primacy, the Agency will provide guidance and grant assistance.

1991 Program

In 1991, the Agency is allocating a total of $6,476,000 supported by 141.7 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

The Agency continues to implement Federal programs in 21 non-primacy states (17 full and four partial) and on Indian lands. This work includes making permit determinations and ensuring that well owners and operators adhere to permit conditions and other regulatory requirements. Regions are providing assistance to Indian tribes working toward primacy.

The Agency is completing its five-year schedule for permitting Class II wells within non-primacy jurisdictions. Regions are implementing state-specific revisions to compliance evaluation programs; these changes, derived from the mid-course evaluation of Class II oil and gas wells, impact such areas as the use of cement records as a valid mechanical integrity test, well construction practices, and the proper closure of abandoned wells. Other direct implementation activities include management of contracts and grants, data management, and permit tracking.

The Agency oversees 36 full and four partial state primacy programs. Regions are responsible for reviewing state annual plans and evaluating and monitoring state programs to ensure consistent application and enforcement of program regulations; this includes a review of state issued permits. Regions continue to provide program-specific training to both new and experienced inspectors. The Regions continue to supervise state Class V demonstration projects and continue to work with states to identify and locate Class IV wells which were reclassified as a result of the Toxicity Characteristic Leaching Procedure (TCLP) and are subject to closure.

The Agency is implementing the "Shallow Injection Well Program Strategy" that calls for integration with the Wellhead Protection and Public Water Systems Supervision Programs. This comprehensive strategy provides a systematic approach for screening the diverse Class V universe and prescribing different levels of regulatory controls. Injection into certain high-risk wells is banned as a result of revisions to the Hazardous Waste Toxic Characteristic Leaching Procedure (TCLP). The remaining well groups are targeted for action based on the contamination risk posed by the wells. Information gained from the Class V demonstration projects aides in the choice of guidance or regulatory revisions as the most effective method of control under different circumstances. Integration with other programs, such as Wellhead Protection, and the use of other authorities, such as RCRA, maximizes the total environmental benefit.

1990 Accomplishments

In 1990, the Agency obligated a total of $6,667,000 supported by 131.8 total workyears for this program, of which $5,695,000 was from the Salaries and Expenses appropriation and $972,000 was from the Abatement, Control, and Compliance appropriation.

The Agency implemented Federal programs in 21 states and on Indian lands. Direct implementation activities focused on making permit determinations and ensuring adherence to permit conditions and other regulatory requirements. Regions implemented ambient monitoring requirements for Class I injection wells, as required under the SDWA Amendments of 1986. Regions provided assistance to Indian tribes working toward primacy.

EPA provided oversight and technical assistance to 36 full and four partial primacy state programs. Regional activities in primacy states included general oversight and technical assistance through the issuance of guidance documents and on-site assistance. Through quarterly reporting data, the Regions reviewed the states' progress and took the necessary actions to ensure proper enforcement. EPA evaluated state efforts to implement their UIC programs and ensured that the minimum regulatory requirements were met. Regions continued to review Class I, II, III, and permitted Class V state-issued permits to ensure consistency with

Federally-approved state programs. These reviews helped to ensure proper enforcement of permit conditions. Regions also negotiated state grant workplans. Class V activities such as inspections and permitting were continued in order to reduce potential contamination of underground sources of drinking water.

During 1990, the Agency conducted its mid-course evaluation of the Class II regulatory provisions for mechanical integrity testing procedures, monitoring, reporting and permitting requirements. Regions oversaw and implemented compliance review strategies to ensure that all permitted or rule-authorized Class I, II, III, and permitted Class V wells receive comprehensive technical/operational evaluations including field inspections on a regular basis. These compliance reviews replaced the five-year cycle of file reviews. Regions reviewed and revised Class V well inventories and assisted the states in identifying and taking enforcement action against high risk Class V wells and banning Class IV wells. Regions continued to give permit determinations high priority. On-site inspections were conducted to ensure compliance with permit conditions. Other activities included developing site-specific guidance, maintaining inventory data, and preparing annual reports.

## DRINKING WATER
## Ground-Water Protection

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Ground-Water Protection | | | | | |
| Salaries & Expenses | $4,201.1 | $4,954.7 | $4,954.5 | $5,419.4 | $464.9 |
| Abatement Control and Compliance | $3,713.7 | $7,511.5 | $7,511.5 | $5,286.5 | -$2,225.0 |
| Reregistration and Expedited Processing | $22.3 | $76.4 | $76.4 | | -$76.4 |
| TOTAL | $7,937.1 | $12,542.6 | $12,542.4 | $10,705.9 | -$1,836.5 |
| TOTAL: | | | | | |
| Salaries & Expenses | $4,201.1 | $4,954.7 | $4,954.5 | $5,419.4 | $464.9 |
| Abatement Control and Compliance | $3,713.7 | $7,511.5 | $7,511.5 | $5,286.5 | -$2,225.0 |
| Reregistration and Expedited Processing | $22.3 | $76.4 | $76.4 | | -$76.4 |
| Ground-Water Protection TOTAL | $7,937.1 | $12,542.6 | $12,542.4 | $10,705.9 | -$1,836.5 |
| **PERMANENT WORKYEARS** | | | | | |
| Ground-Water Protection | 77.6 | 96.3 | 96.3 | 99.3 | 3.0 |
| TOTAL PERMANENT WORKYEARS | 77.6 | 96.3 | 96.3 | 99.3 | 3.0 |
| **TOTAL WORKYEARS** | | | | | |
| Ground-Water Protection | 82.5 | 99.3 | 99.3 | 99.3 | 0.0 |
| TOTAL WORKYEARS | 82.5 | 99.3 | 99.3 | 99.3 | 0.0 |

## Ground Water Protection

### Budget Request

The Agency requests a total of $10,705,900 supported by 99.3 total workyears for 1992, an increase of $1,760,100 and no change in total workyears from 1991. Of the request, $5,419,400 will be from the Salaries and Expenses appropriation and $5,286,500 will be from the Abatement, Control and Compliance appropriation. This represents an increase of $464,900 in Salaries and Expenses and a decrease of $2,225,000 in Abatement, Control and Compliance. Total workyears will include 98.3 from the Salaries and Expenses appropriation and 1.0 from the Registration and Expedited Processing Revolving Fund.

### GROUND WATER PROTECTION

### 1992 Program Request

The Agency requests a total of $10,705,900 supported by 99.3 total workyears for this program, of which $5,419,400 will be from the Salaries and Expenses appropriation and $5,286,500 will be from the Abatement, Control and Compliance appropriation. This represents an increase of $464,900 in Salaries and Expenses and a decrease of $2,225,000 in Abatement, Control and Compliance, and no change in total workyears. The increase in Salaries and Expenses reflects increased personnel costs. The decrease in Abatement, Control and Compliance reflects the completion of projects that do not require a continuing Federal role. Of the total workyears, 98.3 will be supported from the Salaries and Expenses appropriation and 1.0 will be supported by the Registration and Expedited Processing Revolving Fund.

For 1992, EPA will enhance assistance to states in the development and implementation of comprehensive ground-water protection programs. A guidance document will be provided to the states describing recommended elements of a comprehensive state ground-water protection program to protect the resource, and EPA's approach to reviewing voluntarily submitted state programs and providing grant support.

The description of a comprehensive program will be used to work with states to help them achieve their groundwater protection efforts. EPA will provide both financial and technical assistance to the states to help them develop comprehensive programs that: 1) set goals and document progress; 2) characterize the resource and set priorities for actions; 3) develop and implement prevention and control programs; and 4) define roles within the state, and the relationship to Federal programs. EPA will provide incentives to those states demonstrating initiative in developing and implementing comprehensive ground-water protection programs. Particular emphasis will be placed on providing incentives to those states exploring innovative methods of establishing ground-water protection priorities/approaches that are used to guide both state and Federal ground-water activities. The Agency will also work to provide greater integration and consistency among EPA and other Federal agencies' programs in order to facilitate comprehensive protection on the state level.

The Agency will continue to assist states in their implementation of wellhead protection (WHP) programs established in the 1986 amendments to the Safe Drinking Water Act. Wellhead protection programs and activities are important subsets within comprehensive programs and provide important means of setting priorities by identifying and directing protection toward ground-water resources serving as drinking water supplies and, hence, reducing the public health risks from contaminated drinking water.

In 1992, EPA will strengthen the scientific knowledge underlying comprehensive ground-water protection programs by seeking additional environmental indicators of ground-water quality. The Agency will assess the potential for using various organisms as signals of the overall condition of ground-water resources. EPA will also more fully explore means of safeguarding ground water from contamination by nitrates.

EPA will continue to improve the collection and accessibility of ground-water information. During 1992, EPA will develop and implement policies on cross-program integration of ground-water data and policy on the integration of nitrate data into ground-water data bases. The Agency will also strengthen efforts to assist states in the adoption of the minimum data element set for ground water and to modernize STORET.

EPA will expand and enhance efforts to educate the public as well as state and local government officials regarding ground-water protection issues. The Agency will reach out to public officials, providing them with the tools to protect ground water, while it works to increase citizen awareness of and involvement with efforts to safeguard the resource.

For activities related to the 1988 FIFRA amendments, workyears supported by the Registration and Expedited Processing Revolving Fund will support hydrogeological and related technical assistance in the pesticide reregistration process.

1991 Program

The Agency is allocating a total of $12,542,400 supported by 99.3 total workyears for this program, of which $4,954,500 is from the Salaries and Expenses appropriation, $7,511,500 is from the Abatement, Control and Compliance appropriation and $76,400 is from the Registration and Expedited Processing Revolving Fund. Of the total workyears, 98.3 are supported by the Salaries and Expenses appropriation and 1.0 is supported by the Registration and Expedited Processing Revolving Fund.

For 1991, EPA is enhancing assistance to states in developing and implementing ground-water protection activities that move the states beyond protection strategies to comprehensive ground-water protection programs. EPA and the states are profiling the states' current ground-water activities to identify gaps in protection. These "State Profiles" will provide an important base of information and will help states target the ground-water efforts necessary in each state to comprehensively protect the resource as the state desires. The Agency is also assisting states in such technical ground-water concerns as mapping of aquifer systems, conducting resource assessments, developing source control strategies, and determining vulnerability characteristics. EPA is instituting measures to foster institutional capacity building, such as

instituting measures to foster institutional capacity building, such as facilitating the coordination of state management and control activities with local governments to engender effective implementation of comprehensive ground-water protection programs. In addition, EPA is working with other Federal agencies to ensure consistency and integration of Federal ground-water policies, regulations and guidance.

The Agency continues to assist states in their development of WHP programs established in the 1986 amendments to the Safe Drinking Water Act. This program, which addresses the prevention of contamination of ground water serving as public water supplies, is considered by EPA to be an essential component of a state comprehensive ground-water protection program. In addition, EPA is enhancing and expanding its efforts in WHP demonstration projects which concentrate on local issues related to the protection of wellhead areas.

During 1991, EPA is seeking, testing and refining additional environmental indicators of ground-water protection. Other initiatives include developing Ground-Water Data Management Orders which will enhance cross program data sharing and integration. In addition to expanding its data collection efforts, the Agency is strengthening its capacity to disseminate and promote the exchange of information through the use of videos, pamphlets, workshops and conferences.

EPA is maintaining its efforts in Sole Source Aquifer (SSA) designations. The Agency also continues to review projects financially assisted by the Federal government on or near designated SSAs.

For activities related to the 1988 FIFRA amendments, workyears are supporting hydrogeological and related technical assistance in the pesticide reregistration process.

Congressional Directives. A total of $2,225,000 is for the Congressionally directed projects to continue work on the Spokane Aquifer and to fund the National Rural Water Association Programs's ground-water protection program.

1990 Accomplishments

In 1990, the Agency obligated a total of $7,937,100 supported by 82.5 total workyears for this program, of which $4,201,100 was from the Salaries and Expenses appropriation, $3,713,700 was from the Abatement, Control and Compliance appropriation and $22,300 was from the Registration and Expedited Processing Revolving Fund. Of the total workyears, 82.3 were supported from the Salaries and Expenses appropriation and 0.2 were supported by the Registration and Expedited Processing Revolving Fund.

During 1990, the Agency made progress toward completing the "Ground-Water Task Force Report" which contains a set of EPA ground-water protection principles and a policy on the Federal/State relationship in ground-water protection that are intended to set forth an aggressive approach to protecting the nation's ground-water resources and directing the course of the Agency's efforts over the coming years. A key component of this approach is an increased focus on actively assisting states, which should retain their preemminent role in ground-water management, in developing and implementing comprehensive protection programs designed to protect the resource and provide the framework for coordinating state

and Federal activities. The Task Force Report contains a preliminary description of the elements EPA considers to be essential in an adequate comprehensive protection program, which is being further refined in FY 1991.

The ground-water protection program assisted state water agencies in developing hydrogeologic aspects of pesticides management plans which provide for protection methods tailored to area-specific differences in ground-water vulnerability. These plans are an important aspect of a comprehensive approach to ground-water protection.

The Agency promoted prevention of ground-water contamination by encouraging states to develop and implement WHP programs. During the fiscal year, 13 states had wellhead protection programs approved by EPA. Support of WHP programs is a central feature of EPA ground-water protection activities. EPA efforts to support WHP programs included assisting states in the delineation of wellhead protection areas (WHPAs) and enhancing state capacity to both address specific sources of contamination and develop appropriate risk management strategies. Furthermore, EPA initiated a demonstration program with localities to encourage creative and unique approaches to information management in WHPAs.

The Agency implemented efforts to ensure that EPA-related ground-water protection projects collect a minimum set of data elements. Other information management activities included 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. The Agency enhanced and promoted the use of geographic information systems, particularly in identifying the most critical sources of contamination in WHPAs, and provided workshops and seminars for state and local officials on the use of these data management tools for ground-water protection.

EPA responded to five petitions for SSA designation and reviewed 154 Federal financially assisted projects valued at over $560 million on or near a designated SSA.

EPA provided expertise and technical assistance in the pesticide reregistration process for new chemicals and/or new uses, mandated in the FIFRA Amendments of 1988.

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## DRINKING WATER
### Drinking Water Enforcement

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| **PROGRAM** | | | | | | |
| Drinking Water Enforcement | | | | | | |
| Salaries & Expenses | | $3,499.0 | $4,706.8 | $4,706.5 | $5,523.2 | $816.7 |
| | TOTAL | $3,499.0 | $4,706.8 | $4,706.5 | $5,523.2 | $816.7 |
| **TOTAL:** | | | | | | |
| Salaries & Expenses | | $3,499.0 | $4,706.8 | $4,706.5 | $5,523.2 | $816.7 |
| Drinking Water Enforcement | TOTAL | $3,499.0 | $4,706.8 | $4,706.5 | $5,523.2 | $816.7 |
| **PERMANENT WORKYEARS** | | | | | | |
| Drinking Water Enforcement | | 74.0 | 92.8 | 92.8 | 104.9 | 12.1 |
| TOTAL PERMANENT WORKYEARS | | 74.0 | 92.8 | 92.8 | 104.9 | 12.1 |
| **TOTAL WORKYEARS** | | | | | | |
| Drinking Water Enforcement | | 80.5 | 99.9 | 99.9 | 104.9 | 5.0 |
| TOTAL WORKYEARS | | 80.5 | 99.9 | 99.9 | 104.9 | 5.0 |

## Drinking Water Enforcement

Budget Request

The Agency requests a total of $5,523,200 supported by 104.9 total workyears for 1992, an increase of $816,700 and 5.0 total workyears from 1991. All of the request will be for the Salaries and Expenses appropriation. This represents an increase of $816,700 in the Salaries and Expense appropriation.

DRINKING WATER ENFORCEMENT

1992 Program Request

The Agency requests a total of $5,523,200 supported by 104.9 total workyears for this program, an increase of $816,700 for the Salaries and Expenses appropriation and 5.0 total workyears. The increase will support regional enforcement of new public water system (PWS) standards to protect public health when states fail to take action.

EPA is working with states in adopting new enforcement authorities and establishing programs to carry out new requirements. Where states are unable to implement the surface water treatment rule, microbiological contaminant monitoring and lead requirements, EPA will carry out activities normally conducted by primacy state programs, such as technical assistance, inspections/sanitary surveys, public notification, monitor system compliance, enforcement actions, hearings and data management. While EPA enforces these new requirements, states will be building additional program capability, seeking increased program resources, training staff and developing procedures, guidelines and policies necessary to implement the new requirements.

Some states are considering withdrawing as the primary enforcement agent of their drinking water program. When this happens, implementation and enforcement of new as well as existing program requirements will be thrust upon the EPA Regions. The Regions will commence direct implementation in targeted states conducting program management and administration activities, ensuring state laboratory capability, operator training, phasing-in monitoring and reporting requirements, maintaining vital data management and analysis, and conducting the full array of enforcement activities. Additional resources will be used by the Regions to carry out program activities normally conducted by primacy states.

Enforcement depends primarily on timely and accurate reporting of compliance data. Accessible and accurate data will be indispensable as the Regions are required to take over state drinking water programs as well as continue oversight of primacy state activities. EPA will field test the application of a practical data verification protocol, procedures, and user's guide. The EPA Regions will implement a system to identify falsified data and prosecute those individuals that knowingly falsify drinking water data.

The Underground Injection Control (UIC) enforcement program will enforce UIC regulations in the absence of timely and appropriate state action or in states that do not have primary enforcement authority. Priority enforcement will be targeted at shallow wells endangering underground sources of drinking water (USDW) and sensitive ecosystems. Assistance will be given to states when needed to bring shallow wells under control.

1991 Program

In 1991, the Agency is allocating a total of $4,706,500 supported by 99.9 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

Drinking water enforcement focuses on systems in significant noncompliance (SNC), defined on the basis of relative risk to human health posed by different kinds of violations of National Primary Drinking Water Regulations (NPDWRs). While SNCs are the first enforcement priority, all systems in violation are subject to enforcement action, particularly those systems which are about to become SNCs or otherwise are causing a public health threat. When state enforcement fails, EPA issues Administrative Orders (AOs) or initiates court action. In addition, the Regions conduct AO hearings and assess penalties for AO noncompliance in conjunction with Regional Counsels. Based on enforcement program reviews, Headquarters is implementing across-the-board changes in EPA's PWS enforcement efforts. Also, these reviews highlight opportunities for EPA to improve internal data management procedures for faster, more accurate tracking of priority non-compliance and EPA/state response.

UIC enforcement activities ensure testing for mechanical integrity and review and approve permit requirements and applications for oil and gas, mining and shallow injection wells. The monitoring of deep disposal wells continues in order to ensure protection of USDWs. Enforcement actions against violators help to reduce some of the most substantial health threats to humans and the environment as well as set examples to deter future violators.

1990 Accomplishments

In 1990, the Agency obligated a total of $3,499,000 supported by 80.5 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

Regions continued to issue Aos against violators of PWS and UIC program requirements in order to achieve compliance with regulations and standards set by the Agency. Significant non-compliers remained the enforcement priority although other violators were pursued. Where state action failed to remedy a violation, EPA issued Aos or initiated court action. EPA implemented the new AO compliance tracking system designed to provide information on the status of AOs and the actions taken to return violators to compliance. The Regions assisted Regional Counsels in documenting violations which required new and more stringent enforcement actions and participated in activities related to civil enforcement referrals to the Department of Justice.

Approximately four percent of community water systems were in significant noncompliance with microbiological, turbidity, total trihalomethane or other chemical/radiological requirements. Approximately 27 percent of all community

water systems reported some type of violation. The remaining 73 percent of community water systems were in full compliance. The Regions issued 165 final AOs for UIC violations and 149 final AOs and 14 complaints for the assessment of administrative penalties against PWS violators.

5. HAZARDOUS
WASTE

**ENVIRONMENTAL PROTECTION AGENCY**

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## HAZARDOUS WASTE

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| APPROPRIATION | | | | | |
| Salaries & Expenses | $76,681.3 | $91,640.3 | $91,610.8 | $101,587.3 | $9,976.5 |
| Abatement Control and Compliance | $167,453.6 | $193,391.5 | $193,391.5 | $202,553.5 | $9,162.0 |
| Research & Development | $29,980.5 | $25,987.3 | $25,987.3 | $29,594.2 | $3,606.9 |
| TOTAL, Hazardous Waste | $274,115.4 | $311,019.1 | $310,989.6 | $333,735.0 | $22,745.4 |
| PERMANENT WORKYEARS | 1,332.0 | 1,574.6 | 1,574.6 | 1,660.0 | 85.4 |
| TOTAL WORKYEARS | 1,400.4 | 1,631.8 | 1,631.8 | 1,660.0 | 28.2 |
| OUTLAYS | $234,382.5 | $285,317.5 | $285,290.1 | $302,619.2 | $17,329.1 |
| AUTHORIZATION LEVELS | The Solid Waste Disposal Act as amended expired on November 8, 1988. Reauthorization is pending. | | | | |

## HAZARDOUS WASTE

### OVERVIEW AND STRATEGY

The Resource Conservation and Recovery Act (RCRA) of 1976, as revised by the Hazardous and Solid Waste Amendments (HSWA) of 1984, provides the legislative mandate for a nationwide program to protect human health and the environment from the risks of improper management of hazardous and solid wastes. The goals of the Act are: to ensure adequate and safe treatment of hazardous waste from generation through disposal; to ensure adequate and safe management and disposal capacity for solid wastes; and to prevent and detect leakage from underground storage tanks (USTs).

The Emergency Planning and Community Right-to-Know Act, Title III of the Superfund Amendments and Reauthorization Act of 1986, establishes a framework for identification of hazardous chemicals present in communities. This program provides for development of state and local response plans to prevent, protect, and inform the public in the event of a chemical release emergency. The recent Clean Air Act amendments expanded the program by requiring owners and operators of facilities to develop risk management plans to prevent, detect, and respond to chemical accidents.

The demands on and expectations for the Agency's waste management programs continue to rise. During the early 1970's, program direction emphasized identifying and controlling solid waste. The late 1970's and 1980's saw the refinement and expansion of this direction to include "cradle to grave" management of hazardous wastes and states' implementation of Federally-authorized national management standards. In the 1990's, the Agency will address problems associated with the expanding universe of wastes. Some of these wastes include municipal solid waste, special large-volume wastes, industrial solid waste, and medical waste. The Agency will continue its work on completing the remaining protective mandates of HSWA hazardous waste requirements. In addition, the Agency will reorient its corrective action resources to address the greatest number, and most environmentally-risky facilities.

The Agency's strategy to address these demands and expectations is to: 1) strengthen state relationships by leveraging permitting and enforcement resources to improve hazardous waste program implementation; 2) develop new, and revise existing regulations to address evolving program directions; and 3) conduct research, encourage technology development and transfer, and establish outreach programs to provide the scientific program foundation, national information network, and public communications capability necessary to successfully conduct a national waste management program.

#### Leveraging a National Regulatory Program Through the States

The Agency recognizes the essential role of the states in developing, implementing, and enforcing a national waste management program. The Agency is providing increases in resources to assist the states in fulfilling their growing responsibilities. Success in managing the expanding universe of hazardous, solid, municipal, and special wastes depends on a strong partnership between Federal and state governments. The Agency and the states will jointly examine existing state authorities to determine the changes necessary to meet national

hazardous waste program requirements. The Agency's Regions will assist the states in upgrading their program capabilities to meet new and modified Federal standards. The states will continue to develop legislation and regulations to incorporate HSWA provisions as well as new and revised requirements into their programs.

The permitting program is the backbone of the national hazardous waste management system upon which depends our ultimate success in achieving the legislative direction envisioned in HSWA -- the protection of our health and environment from the risks of ill-managed wastes. The permitting program will continue to issue permits to operating and closing hazardous waste management facilities, addressing the most environmentally-significant facilities first. The Agency will increase state resources for post-closure permitting of environmentally-significant land disposal facilities and permitting for the most environmentally-significant storage and treatment facilities will be undertaken. The Agency and states will continue to modify permits as necessary to address changing regulations, new corrective action provisions, and changes to facility design and practices.

The Agency's concentration on meeting the mandated permitting deadlines and on recent use of corrective action order authorities have created an expanding universe of facilities where corrective action requirements have been imposed. The Agency will continue to encourage the states, through HSWA authorization, to assume the lead for approximately fifty percent of corrective action oversight. The Agency and the states will continue to oversee owner/operators' corrective action activities and will tailor their facilities oversight to ensure effective owner/operator response. Where feasible, interim corrective measures will be used to reduce overall risk, while leveraging limited resources, to address the largest number of environmentally-significant facilities.

As new hazardous wastes continue to be brought into the RCRA regulatory universe, an increased level of Federal and state inspection and enforcement activity will be necessary to ensure continued industry compliance. Examples of this expanding waste universe include wastes brought in under the organic toxicity characteristic rule, and mineral processing and wood preserving waste listings. The Agency is increasing Regional and state resources for this higher level of enforcement activity.

Additionally, greater emphasis will be placed on inspecting generator facilities and conducting searches of facilities operating illegally outside the RCRA system. Increased enforcement activities in these areas are expected to provide leveraged pollution prevention benefits. Federal and state resources will be designated to fund these activities.

The Agency will provide Federal and state resources to continue progress toward the completion of lake-wide management plans for Lake Ontario and Lake Michigan. Greater levels of enforcement activities, particularly conducting facility assessments and taking corrective action as appropriate, will be directed toward the Great Lakes Basin.

Emphasis on non-hazardous waste management activities will continue as Regions and states work to implement revised municipal waste management criteria, and to support the increased national attention to municipal waste recycling and

source reduction. The Regions will provide project-specific financial assistance to develop a strong and consistent national effort to attain municipal waste management and reduction goals as established in the Agency's Agenda for Action.

The Underground Storage Tanks (UST) program will focus on preventing, detecting, and correcting leakage from USTs containing petroleum or other hazardous substances. Because this is a state delegated program, the Agency's strategy will be to monitor and evaluate state implementation and enforcement performance, and provide ongoing technical information, assistance, and training to build state capabilities.

The Agency has promulgated a number of important regulations in the UST program: the Federal technical standards, leak detection and corrective action regulations for both petroleum and hazardous substance tanks, and financial responsibility regulations for petroleum tanks. The Agency's task is to help states develop UST regulatory programs as comprehensive as the Federal regulations. Some states have completed this process and submitted their applications for program approval. The remaining states will continue working to strengthen their programs to be no less stringent than the Federal regulations while continuing to manage their existing state programs.

As the states and local communities move from development to implementation of emergency response plans under the Title III program, the Agency will assist them in developing their capability to enforce the emergency planning and chemical storage and release notification requirements. National guidance, technical assistance, and training will highlight enforcement targeting mechanisms and development of the case referral process through state legal systems.

Sustaining a Responsive National Regulatory Program

The hazardous waste regulatory program must continue its work to complete the remaining requirements mandated in HSWA, responding to statutory and court-ordered deadlines. The national program must also respond to the concerns of an increasingly aware and informed public, which expects Agency action on a growing universe of waste management facilities in such diverse areas as municipal solid waste, waste exports and imports, and special large volume wastes.

In order to implement the legislative intent to identify and bring under management those wastes considered hazardous, the Agency will perform preliminary listing studies and develop regulations to list as hazardous the specific wastes named in HSWA. The Agency will begin development of an environmental data initiative, an essential step in providing the RCRA program with information on solid and hazardous waste management activities. This will improve decisionmaking and EPA's and the states' ability to measure progress. In addition, the Agency will provide a characterization of the industrial landfill universe as a first step in order to understand the risks posed by these facilities. The Agency will provide a more complete picture of industrial waste management activities. The Agency will begin development of treatment standards for those wastes listed as hazardous since the enactment of HSWA. The Agency will implement the land disposal restrictions program by processing treatment capacity and no migration petitions. These regulatory efforts will substantially address major HSWA protective mandates to study, identify, list, restrict disposal, and manage certain hazardous wastes. In addition, the Agency will

produce a rule for the authorization of Indian tribes which will improve the quality of Indian lands by increasing tribal capabilities in managing environmental protection programs.

The Agency will proceed with its efforts to address emerging solid waste management issues of national concern by serving as a technical clearinghouse for municipal solid waste management information. The Agency will continue to address municipal solid waste source reduction and recycling programs recommended in the Agenda for Action for solid waste. These efforts will include establishing volume and toxicity reduction goals as well as encouraging the initiation of source reduction and recycling programs to meet various state and local needs. The Agency will propose a Subtitle D state program approval rule which will provide the necessary direction for comprehensive management of the nation's municipal solid waste.

The Agency will respond to management concerns in its special waste program by promulgating rules for oil and gas and mining waste and will issue a regulatory determination on exempt mineral processing wastes in 1991. Also, the Agency will issue mixed waste guidance and rules, and conduct a regulatory determination on cement kiln dust. In the international arena, the Agency will develop amendments to its hazardous waste export program rules to ensure proper disposition of hazardous waste abroad.

Pollution prevention and minimization of hazardous and solid waste are national priorities. The Agency will promote pollution prevention through specific initiatives, such as encouraging the use of re-mining techniques at abandoned or inactive mine tailing sites. Significant Agency efforts will be devoted to enhancing outreach and education programs for encouraging industrial source reduction and market-based recycling. Headquarters will reexamine policies, guidance, and regulations, and will promote pollution prevention in its permit activities. The Agency will continue to integrate pollution prevention conditions into RCRA settlement agreements and will implement the recommendations of the study on the role of the RCRA inspector in waste minimization activities. The UST program will continue its mission to prevent pollution of surface and groundwater due to the leaking of underground storage tanks.

Finally, the Agency will begin the regulatory development process necessary to meet the statutory deadlines under the Clean Air Act accidental release provisions. Immediate efforts will focus on the following: 1) developing a list of hazardous chemicals (and associated thresholds) that upon accidental release risk serious harm to the general public and the environment; 2) developing regulations requiring owners and operators of facilities to develop risk management plans to prevent, detect, and respond to accidental releases into the air, 3) providing support and establishing a liaison role with the Chemical Safety Board; 4) conducting a study on the hazards associated with hydrofluoric acid; and 5) coordinating facility reporting information with state and local governments.

Supporting the Regulatory Program Through Research, Technology Transfer and Public Participation

The research program provides the scientific and technical information necessary to support the development and implementation of hazardous waste regulations. Scientific information on risk assessment, monitoring

methodologies, alternate technologies, pollution prevention, health effects, and the environmental processes associated with hazardous waste, from generation to disposal, is provided to the Regions, state and local government, private industry, and other decision-makers.

The Agency will conduct research in several areas: pollution prevention and waste minimization, alternate technologies for the management and disposal of wastes, land disposal, incineration, waste characterization and identification, quality assurance, underground storage tank releases, oil spills, and municipal solid wastes. The Agency will support technology transfer of its research findings to encourage implementation of improved methods and practices.

Increased resources will be provided to support research on the use of bioremediation for the cleanup of hazardous wastes and on the health effects of incineration. Increased resources will also be provided to support implementation of site-specific technical support for RCRA corrective action.

Increased Regional resources will be provided for on-line activation of the RCRA information system in all EPA Regions and a number of states. This system will enable the Agency, Regions, and the states to better monitor facility progress and identify national, Regional, and state trends in hazardous waste management. This improved data collection system, in conjunction with the Agency's Environmental Data Initiative, will provide assistance in evaluating the effectiveness of waste management regulations and development of regulatory improvements.

Utilizing the Private Sector for Essential Consulting Services

The Agency requires private consultants to perform essential support in cases where it is not economically effective to possess the specialized, expert personnel services required. The Agency will utilize the services of consultants for development of regulatory impact analyses, highly complex regulations, and national guidance documents. Consultants will be required for functionally specialized technical assistance necessary for program implementation, and for the development of comprehensive information management systems.

## HAZARDOUS WASTE

| PROGRAM ACTIVITIES | ACTUAL 1990 | CURRENT ESTIMATE 1991 | ESTIMATE 1992 | INCREASE (+) DECREASE (-) 1992 VS 1991 |
|---|---|---|---|---|
| Regulations | | | | |
| RCRA Standards . . . . | 22 | 29 | 32 | +3 |
| Proposals . . . . . | 11 | 19 | 15 | -4 |
| Promulgations . . . . . | 11 | 10 | 17 | +7 |
| Effl. Stds. Decision Doc. | | | | |
| Effl. Stds. Data Summaries. | | | | |
| UIC Petition Reviews . | | | | |
| Implementation | | | | |
| Guidance Documents . . | 23 | 28 | 18 | -10 |
| Reports to Congress . . | 3 | 3 | 0 | -3 |
| State Authorization (cum.) | | | | |
| Base Program . . | 46 | 48 | 52 | +4 |
| HSWA Cluster I . | 7 | 17 | 32 | +15 |
| Final Permit Determinations and Closures (Cumulative) | 2,076 | 2,271 | 2,531 | +260 |
| Ongoing Permit Processing | 498 | 775 | 780 | +5 |
| UIC Permit Revisions . | | | | |
| Enforcement/Corrective Action | | | | |
| Inspections . . . . | 12,698 | 13,382 | 14,907 | +1,525 |
| Administrative Orders . . . . . | 1,500 | 1,300 | 1,507 | +207 |
| Civil Litigation | 172 | 147 | 164 | +17 |
| Criminal Litigation . . . | 115 | 132 | 132 | N/C |
| Corrective Action Facility Assessments . . . | 230 | 107 | 0* | N/A |
| Monitoring of Corrective Action Activities . . . | 268 | 700 | 700 | N/C |
| POTW Corrective Measures . . . . | | | | |

* Funded by Superfund under the Environmental Priorities Initiative

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## HAZARDOUS WASTE
### Hazardous Waste Research

| PROGRAM | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | | |
| Scientific Assessment - Hazardous Waste | | | | | | |
| Salaries & Expenses | | $1,247.2 | $1,062.2 | $1,062.2 | $1,149.5 | $87.3 |
| Research & Development | | $1,538.2 | $1,064.0 | $1,064.0 | $1,368.4 | $304.4 |
| | TOTAL | $2,785.4 | $2,126.2 | $2,126.2 | $2,517.9 | $391.7 |
| Monitoring Systems & Quality Assurance - Hazardous Waste | | | | | | |
| Salaries & Expenses | | $3,334.6 | $3,110.1 | $3,110.1 | $3,213.3 | $103.2 |
| Research & Development | | $7,840.8 | $6,056.9 | $6,056.9 | $6,507.5 | $450.6 |
| | TOTAL | $11,175.4 | $9,167.0 | $9,167.0 | $9,720.8 | $553.8 |
| Health Effects - Hazardous Waste | | | | | | |
| Salaries & Expenses | | $634.2 | $602.8 | $602.8 | $622.1 | $19.3 |
| Research & Development | | $764.0 | $61.8 | $61.8 | $870.5 | $808.7 |
| | TOTAL | $1,398.2 | $664.6 | $664.6 | $1,492.6 | $828.0 |
| Environmental Engineering & Technology - Hazardous Waste | | | | | | |
| Salaries & Expenses | | $5,257.7 | $5,037.1 | $5,008.1 | $5,430.3 | $422.2 |
| Research & Development | | $13,855.5 | $11,327.3 | $11,327.3 | $14,082.5 | $2,755.2 |
| | TOTAL | $19,113.2 | $16,364.4 | $16,335.4 | $19,512.8 | $3,177.4 |
| Environmental Processes & Effects - Hazardous Waste | | | | | | |
| Salaries & Expenses | | $3,479.4 | $3,387.0 | $3,387.0 | $3,560.1 | $173.1 |
| Research & Development | | $3,546.9 | $3,087.3 | $3,087.3 | $5,479.2 | $2,391.9 |
| | TOTAL | $7,026.3 | $6,474.3 | $6,474.3 | $9,039.3 | $2,565.0 |
| Technical Information and Liaison - Hazardous Waste | | | | | | |
| Salaries & Expenses | | | | | $6.0 | $6.0 |
| Research & Development | | | $840.0 | $840.0 | $886.1 | $46.1 |
| | TOTAL | | $840.0 | $840.0 | $892.1 | $52.1 |
| Integrated Hazardous Waste Research | | | | | | |
| Research & Development | | $2,435.1 | $3,550.0 | $3,550.0 | $400.0 | -$3,150.0 |
| | TOTAL | $2,435.1 | $3,550.0 | $3,550.0 | $400.0 | -$3,150.0 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $13,953.1 | $13,199.2 | $13,170.2 | $13,981.3 | $811.1 |
| Research & Development | | $29,980.5 | $25,987.3 | $25,987.3 | $29,594.2 | $3,606.9 |
| Hazardous Waste Research | TOTAL | $43,933.6 | $39,186.5 | $39,157.5 | $43,575.5 | $4,418.0 |

## HAZARDOUS WASTE
### Hazardous Waste Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PERMANENT WORKYEARS** | | | | | |
| Scientific Assessment - Hazardous Waste | 14.3 | 17.1 | 17.1 | 18.2 | 1.1 |
| Monitoring Systems & Quality Assurance - Hazardous Waste | 43.3 | 47.5 | 47.5 | 47.9 | 0.4 |
| Health Effects - Hazardous Waste | 10.4 | 11.6 | 11.6 | 11.6 | 0.0 |
| Environmental Engineering & Technology - Hazardous Waste | 81.6 | 84.9 | 84.9 | 89.9 | 5.0 |
| Environmental Processes & Effects - Hazardous Waste | 49.1 | 50.0 | 50.0 | 51.5 | 1.5 |
| Technical Information & Liaison - Hazardous Waste | | | | 0.1 | 0.1 |
| TOTAL PERMANENT WORKYEARS | 198.7 | 211.1 | 211.1 | 219.2 | 8.1 |
| **TOTAL WORKYEARS** | | | | | |
| Scientific Assessment - Hazardous Waste | 15.9 | 17.1 | 17.1 | 18.2 | 1.1 |
| Monitoring Systems & Quality Assurance - Hazardous Waste | 47.1 | 47.5 | 47.5 | 47.9 | 0.4 |
| Health Effects - Hazardous Waste | 12.0 | 11.6 | 11.6 | 11.6 | 0.0 |
| Environmental Engineering & Technology - Hazardous Waste | 85.2 | 84.9 | 84.9 | 89.9 | 5.0 |
| Environmental Processes & Effects - Hazardous Waste | 51.2 | 50.0 | 50.0 | 51.5 | 1.5 |

HAZARDOUS WASTE
Hazardous Waste Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| Technical Information and Liaison - Hazardous Waste | | | | 0.1 | 0.1 |
| TOTAL WORKYEARS | 211.4 | 211.1 | 211.1 | 219.2 | 8.1 |

## HAZARDOUS WASTE

### Hazardous Waste Research

#### Principal Outputs

1992:

Scientific Assessment

- 20-30 Health and Environmental Effects Documents
- Prepare Approximately 30 Subchronic Testing Protocols for RCRA Chemicals
- Technical Support for RCRA Site-Specific Assessments - e.g., Petitions, ACLs, etc.
- Guidance Manual - Feasibility Study of Environmental Monitoring and Exposure Assessment for a Municipal Waste Combustor: Rutland, Vermont Pilot Study

Monitoring Systems and Quality Assurance

- Optimization of Inductively Coupled Plasma/Mass Spectroscopy (ICP/MS) for Metals Analysis
- Report on Analytical Methods Validation for Analytes Lacking Standardized Methods
- Annual Report on Quality Control Samples for RCRA Appendix VIII Chemicals

Health Effects

- Report on the Bioavailability of Metal Residue in Soil

Environmental Engineering and Technology

- Pollution Prevention Case Studies
- Industry-Specific Pollution Prevention Guides
- Background Report on Existing Clean Products Programs
- Engineering Reports on Technologies for Treating Contaminated Soil and Debris
- Evaluation of Biofilters for Control of Hazardous Air Emissions.
- Report on the Construction Quality Assurance/Construction Quality Control of Waste Management Facilities
- Guidance Documents on the Design and Operations of Landfills and Surface Impoundments
- Incineration Research Conducted at the US EPA Incineration Research Facility during in 1991

- o Report on the Environmental Effects of Ash Utilization
- o Report on the Optimization of Soil Vapor Extraction for Remediation of Subsurface Gasoline Releases
- o Report on the Application of Low Temperature Thermal Desorption for Cleaning up LUST Sites
- o Report on Recovery of Landfill Gas
- o Reports on Municipal Innovative Technology Evaluations
- o Protocols for Testing Efficacy and Toxicity of Bioremediation Agents
- o Protocol for Testing Efficacy and Toxicity of Dispersants

Environmental Processes and Effects

- o Report on Available Ground-Water Models
- o Numerical Model for Multiphase Chemical Transport in Porous Media
- o Report on Foliar Uptake of 2,3,7,8-TCDD by Three Plant Species

1991:

Scientific Assessment

- o 50-60 Health and Environmental Effect Documents
- o Prepare Approximately 30 Subchronic Testing Protocols for RCRA Chemicals
- o Technical Support for RCRA Site-Specific Assessments - e.g., Petitions, ACLs, etc.
- o Municipal Waste Combustors Indirect Exposures Methodology: Case Studies (St. Louis and Jacksonville)

Monitoring Systems and Quality Assurance

- o Report on Field Validation of Dual Range Carbon Dioxide Monitors
- o Comprehensive Soil Sample Preparation Manual for Volatile Organic Compounds
- o Report on the Application of Borehole Geophysics in Waste Site Monitoring
- o Annual Report on Quality Control Samples for RCRA Appendix VIII Chemicals
- o Field Test of Peat for Adsorption of Hydrocarbon Contamination from Underground Storage Tanks
- o Research on Continuous Monitoring Methods for Detection of Dioxin and Mercury in Emissions

Environmental Engineering and Technology

- Incineration Research Conducted at the US EPA Incineration Research Facility during 1990
- Report on the Effects of MWC Leachate on Natural and Geosynthetic Liners
- Final Report on Internal Inspection Protocol and Validation
- Update State-of-the-Art on the Application and Effectiveness of Oil Spill Dispersants
- Reference Document on Soil Vapor Extraction Technology
- Expansion of Computerized On-line Information System for Underground Storage Tank Technology Transfer
- Development, Operation, and Maintenance of a Computerized On-Line Information System for Underground Storage Tank Technology Transfer
- Final Report on Evaluation of Volumetric Leak Detection for Chemical USTs
- Report on Biological/Physical Clogging and Degradation of Geosynthetics in Municipal Solid Waste Drainage Systems

Environmental Process and Effects

- Report on Nitrate Contamination Studies
- User's Manual for Two-Dimensional Multiphase Transport Model
- Report on Methods for Handling Spatial Variability of Subsurface Environments
- Computer Program for Estimating Hydraulic Properties of Unsaturated Soils for Contaminant Transport Modeling
- Report on Toxicity Profiles for Hazardous Waste Characterization: An Assessment of the Toxicity and Bioaccumulation Potential of Hydrolyzed Leachates
- Report on Forced Air Ventilation for Remediation of Unsaturated Soils Contaminated by Volatile Organic Compounds

1990:

Scientific Assessment

- Carcinogenicity Profiles for Third Portion of Land Disposal Ban
- 29 Health and Environmental Effects Documents
- Beta Test Model of Risk Assistant Expert System
- Prepare Approximately 30 Subchronic Testing Protocols for RCRA Chemicals

- Technical Support for RCRA Site-Specific Assessments - e.g., Petitions, ACLs, etc.

- Report: Kinetics and Toxicity Studies in Monkeys Exposed to TCDD

- Final Report: Indirect Exposures Methodology for Municipal Waste Combustors

Monitoring Systems and Quality Assurance

- Report on Research Statistics, Geostatistics, and Chemometrics

- Summary Report on Quality Assurance Support Including Development of Quality Assurance Materials for Unconventional Matrices

- Annual Report on Quality Control Samples for RCRA Appendix VIII Chemicals

- Guide for Field Screening of Underground Storage Tanks

- Handbook for the Design and Installation of Groundwater Monitoring Wells

- Progress Report on Methods Development for the Supercritical Fluid Extraction of Soil and Sediments

- Proximity/Impact of Subtitle D Facilities to Wet Environments

Health Effects

- Report on the Scientific and Programmatic Issues Associated with Metal Residues

Environmental Engineering and Technology

- Waste Minimization Guidance Manuals for Seven Industries

- Report to Congress on Pollution Prevention Research

- Reports on OSW Methodology for Multi-Media Risk Assessment

- Technical Report on the Summary of Waste Minimization Evaluations supported by the USEPA

- Minimization and Control of Hazardous Combustion By-Products

- Operations and Research at the USEPA Incineration Research Facility (Annual Report for 1989)

- Report on EPA/Environment Canada; RDF Combustion Technology, Environmental Characterization Mid-Connecticut Resources Recovery Facility

- Report on the State of the Art on Internal Tank Inspection Equipment and Procedures

- Protocol for Evaluating Pipeline Leak Detection Systems

Environmental Processes and Effects

- Report on Site Specific Multimedia Modeling for Ranking Closure Options at RCRA Land Disposal Operations
- Report on Evaluation of Selected Plants as Cover Crops for HW/SF Sites
- User's Manual for MINTEQ2 with Updated Theory and Applications
- Report on Hydrogeological Approaches for Mobilizing Immiscible Wastes for UST Corrective Actions
- Report on Determining Hydrologic Properties of Subsurface Environments
- Report on Fate and Transport of Residual Matrix Constituents in Soil
- Report on Use of Toxicity Profiles for Aquatic Impacts as Waste Leachate Characteristics

Integrated Hazardous Waste Research

- Establish the Integrated Hazardous Waste Research Center and Initiate Multiple Research, Education and Technology Transfer Products

## HAZARDOUS WASTE

### Hazardous Waste Research

Budget Request

The Agency requests a total of $43,575,400 supported by 219.1 total workyears for 1991, an increase of $4,418,000 and an increase of 8.1 total workyears from 1991. Of the request, $13,981,300 will be for the Salaries and Expenses appropriation and $29,594,200 will be for the Research and Development appropriation. There is an increase of $811,100 in Salaries and Expenses which is primarily due to a realignment of ORD positions to better manage resources. An increase of $3,606,900 in Research and Development provides for additional studies on bioremediation, municipal solid waste, health risk effects of incineration, oil spills, technical support for RCRA corrective action, and the transfer of aquifer restoration research and oil spills research from the Water Research Program.

Program Objectives

The Resource Conservation and Recovery Act (RCRA) authorizes a regulatory program to identify and manage wastes that 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.

SCIENTIFIC ASSESSMENT

1992 Program Request

The Agency requests a total of $2,517,900 supported by 18.2 total workyears for this program, of which $1,149,500 will be for the Salaries and Expenses appropriation and $1,368,400 will be for the Research and Development appropriation. This represents an increase of $87,300 and 1.1 workyears for Salaries and Expenses. The increase is primarily due to a realignment of ORD positions to better manage resources. The increase in Research and Development is $304,400. Additional resources will be used to respond to regional requests on health risk assessment issues related to RCRA corrective action, and to the preparation of Health and Environmental Effects Documents (HEEDs).

ORD will establish a new technical support center for health and risk assessment to provide assistance to Regional and State staff engaged in RCRA corrective action. ORD will also provide Health and Environmental Effects Documents, Reference Doses, and technical evaluations to support the RCRA listing, permitting and land disposal restriction programs. Work will continue on improving microcomputer assisted risk assessment tools.

A guidance manual will be completed for use by the State of Vermont on the feasibility case study completed in 1991. A sensitivity analysis using

chemical-specific input parameters will be conducted as an extension of the municipal waste combustion indirect exposures methodology. The assessment of potential hazards associated with municipal solid waste recycling will continue with emphasis on particular wastes (e.g. tires).

1991 Program

In 1991, the Agency is allocating a total of $2,126,200 supported by 17.1 total workyears for this program, of which $1,062,200 is from the Salaries and Expenses appropriation and $1,064,000 is from the Research and Development appropriation.

In 1991, the program is continuing to emphasize the preparation of risk assessment documents and development and evaluation of tests and procedures for conducting risk assessments. Health and Environmental Effects Documents, Reference Doses, and technical evaluations are provided to support the RCRA listing, permitting and land disposal restriction programs. Microcomputer-assisted risk assessment tools are being further developed.

A case study on the indirect exposures associated with municipal waste combustion will be provided to support the risk assessment methodology and incineration regulations. A comparative risk assessment report on indirect exposure methodologies will be completed. The assessment of potential hazards associated with municipal solid waste recycling will be initiated.

1990 Accomplishments

In 1990, the Agency obligated a total of $2,785,400 supported by 15.9 total workyears for this program, of which $1,247,200 was from the Salaries and Expenses appropriation and $1,538,200 was from the Research and Development appropriation.

The 1990 program emphasized the production of health and environmental effects documents for the listing/delisting programs, and Reference Doses for the land disposal restriction program. The exposure work was completed for risk assessments of burning contaminated soils in mobile incinerators. Peer review of the draft report on the site-specific risk assessment of the municipal waste combustor at Rutland, Vt. was completed. The indirect exposures methodology for municipal waste combustion was also completed. The beta test version of the Risk Assistant expert system was made available.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1992 Program Request

The Agency requests a total of $9,720,800 supported by 47.9 total workyears for this program, of which $3,213,300 will be for the Salaries and Expenses appropriation and $6,507,500 will be for the Research and Development appropriation. This represents an increase from 1991 of $103,200 for the Salaries and Expenses appropriation and a .4 increase in total workyears. The increase is requested to fund the Federal workforce needed to implement the President's program in 1992. The increase from 1991 of $450,600 for the Research and Development appropriation reflects additional funding for research into methods to develop monitoring protocols for oil spills and

municipal solid waste, and to provide technical support to Regional offices in the area of RCRA corrective action.

ORD will utilize additional resources to provide site-specific technical support to the RCRA corrective action community for monitoring and site characterization. Work will be conducted at Subtitle C facilities to provide the scientific information required to implement corrective actions.

Researchers will develop methods for detecting toxic wastes in soils and sediments and for detecting organics in the ambient air, near and at waste treatment disposal facilities. Major methods development and evaluation will be conducted utilizing supercritical fluid extraction and high performance liquid chromatography. Validation and improvement of the methods contained in the Test Methods for Evaluating Solid Waste (SW-846) continues. Geophysical, geochemical and in-situ spectroscopic methods for subsurface monitoring will be evaluated for their ability to detect and track waste plume migration in the subsurface.

Remote sensing will be conducted to assist permit writers in verifying the contents of permit applications and to assist enforcement in assessing compliance.

ORD will conduct oil spills research to refine and validate microcosm models used to assess impacts of spills in individual environments. This will eliminate the need for testing each type of cleanup technique in each different environment. This will provide response personnel with simplified analytical tools to monitor the progress of a cleanup operation. These include the identification of benchmark oil components which are easy to measure, the development of biological indicators to assess cleanup effectiveness, as well as improved methods for chemical analysis in the field.

Quality assurance research will focus on improving quality control sample matrices and expanding the universe of quality control samples.

Remote sensing support is 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, in support of leak prevention and corrective action, leak monitoring methods applicable to underground storage tanks are under evaluation. This activity includes evaluation of leak monitoring methods. Monitoring evaluation of remediation techniques such as passive bioremediation will be conducted.

Guidelines for monitoring groundwater at RCRA Subtitle D landfill facilities will be developed.

1991 Program

In 1991, the Agency is allocating a total of $9,167,000 supported by 47.5 workyears for this program, of which $3,110,100 is for the Salaries and Expenses appropriation and $6,056,900 is for the Research and Development appropriation.

Methods are being developed to detect toxic wastes in soils and sediments and for detecting organics in the ambient air, near and at waste treatment

disposal facilities. Validation and improvement of the methods contained in the Test Methods for Evaluating Solid Waste (SW-846) continues. Geophysical, geochemical and in-situ spectroscopic methods for subsurface monitoring are evaluated for their ability to detect and track waste plume migration in the subsurface. Remote sensing is conducted to verifying the contents of permit applications and to assist enforcement in assessing compliance.

Quality assurance research focuses on improving quality control sample matrices and expanding the universe of quality control samples.

Remote sensing support is 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, in support of leak prevention and corrective action, leak monitoring methods applicable to underground storage tanks are under evaluation. This activity includes evaluation of leak monitoring methods to establish which existing instrumentation meet established performance criteria. Techniques for determining soil gas concentrations and constituents and for determining ground water contamination are evaluated under field and laboratory conditions.

Guidelines for monitoring groundwater around RCRA Subtitle D landfill facilities are being developed.

1990 Accomplishments

In 1990, the Agency obligated a total of $11,175,400 supported by 47.1 workyears for this program, of which $3,334,600 was from the Salaries and Expenses appropriation and $7,840,800 was from the Research and Development appropriation.

During 1990, research was conducted to support RCRA requirements to determine waste composition, to detect levels of toxic constituents in soils, groundwater, and air, and to characterize hazardous constituents through the evaluation, validation, development and improvement of analytical methods for SW-846. Monitoring methods were evaluated and/or developed for use at RCRA Subtitle D landfills. A major guidance document was developed for the design and installation of ground-water monitoring wells. Remote sensing was 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 were established and a manual for conducting field screening monitoring of underground storage tanks was developed.

HEALTH EFFECTS

1992 Program Request

The Agency requests a total of $1,492,600 supported by 11.6 total workyears for this program of which $622,100 will be for the Salaries and Expenses appropriation and $870,500 will be for the Research and Development appropriation. This represent an increase of $19,300 for Salaries and Expenses and no change in work years. The increase in Research and Development is $808,700. Additional resources will be used for health risk research relating to the bioavailability of metals in soils and incineration residuals, and

health effects research relating to the potency of complex emissions from municipal waste combustors.

This program will explore the relationship between exposure to disposed incineration residuals containing metals and dose to target tissues. Research will be performed on bioavailability, metabolism, distribution, and elimination of metals. The municipal solid waste program will continue the evaluation of comparative potency approaches to the assessment of combustion emissions and residuals.

1991 Program

In 1991, the Agency is allocating a total of $664,600 supported by 11.6 total workyears for this program, of which $602,800 is from the Salaries and Expenses appropriation and $61,800 is from the Research and Development appropriation.

Research is focused on improving the assessment of risks from emissions and residuals of hazardous waste management practices and municipal solid waste combustion. Research in this area is necessary to improve our understanding of the principles governing dosimetry of metals and will improve the accuracy of assessment of such risks.

1990 Accomplishments

In 1990, the Agency obligated a total of $1,398,200 supported by 12.0 total workyears for this program, of which $634,200 was from the Salaries and Expenses appropriation and $764,000 was from the Research and Development appropriation.

In 1990, the studies of in-vivo exposure to combustion emissions were completed. A metals residue bioavailability program was initiated and a workshop was held to identify scientific and programmatic issues. A report on metals research issues (on a metal by metal basis) was prepared as a springboard for the metals research program.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1992 Program Request

In 1992, the Agency requests a total of $19,512,800 supported by 89.9 total workyears for this program, of which $5,430,300 will be for the Salaries and Expenses appropriation and $14,082,500 will be for the Research and Development appropriation. This represents an increase from 1991 of $422,200 and 5.0 additional total workyears in the Salaries & Expenses appropriation. These increases are primarily due to a realignment of ORD positions to better manage resources. An increase of $2,755,200 in Research and Development provides for additional studies on bioremediation, municipal solid waste, health risk effects of incineration, oil spills, technical support for RCRA corrective action, and the transfer of oil spills research from the Water Research Program.

ORD will continue to emphasize research on reducing the production of

pollutants at their source. Research will define assessment techniques to measure the reduction in quantities of pollutants produced and to identify potential areas for pollution prevention and risk reduction. Other research efforts will evaluate both existing and emerging alternative treatment processes for wastes likely to be restricted from land disposal. Research funded in 1991 on using solar energy to treat waste will be completed.

ORD will initiate a new research effort on bioremediation to complement the ongoing work funded under the Superfund Research program. Since bioremediation is a complex process involving the interaction of many scientific disciplines such as microbiology chemistry and engineering, the main effort in this objective is to improve the base of scientific knowledge, particularly as it applies to optimizing the application of in-situ-bioremediation. The field component of this objective will build a base of data on how to combine microbiological science and engineering in the field, and will serve as a test-bed for the laboratory research.

Oil spills research will be carried out to provide On-Scene Coordinators (OSC) with the scientific and engineering data required to choose the most cost-effective and environmentally sound option for dealing with a spill and the associated clean-up. This research includes developing protocols to evaluate the efficacy and toxicity of a variety of chemical and biological agents designed to be used under various conditions to remove oil spilled into water or from beaches, marshes and shorelines. These protocols will make it possible to evaluate commercially available products as part of the listing procedures provided for in the National Contingency Plan, as well as to have this information available to the OSC at the time of a spill. Research will be conducted to demonstrate mechanical cleanup techniques for inland spills and for removing oil spilled into ice-cover bodies of water.

Major issues associated with disposal of hazardous waste to the land will 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 also characterizes 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.

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. Incineration research will focus on four areas: 1) characterizing performance of existing thermal technologies; 2) developing methods for compliance monitoring of these facilities; 3) characterizing products of incomplete combustion and their formation conditions; and 4) developing methods to predict performance to avoid process failure and control process reliability. Information is being developed for both industrial processes and incinerators to support regulation of toxic metal emissions, emission of products of incomplete combustion, and for refinement of the destruction removal efficiency rule.

Underground storage tank (UST) research evaluates prevention, detection, and corrective action technologies to identify cost-effective, reliable

techniques and equipment for USTs. This research has and will continue to produce publications on prevention practices, assessment of retrofit techniques for leaking underground storage tanks, and improvement of emergency response and remedial corrective action technologies.

The Municipal Innovative Technology Evaluation (MITE) program will continue. 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 is on demonstration of new or modified equipment processes or techniques at full or nearly full scale. Major issues associated with disposal of municipal solid waste to the land will be investigated. Research on municipal solid waste incinerators will be conducted. The emphasis will shift from field evaluation of various air pollution control devices and the assessment of ash utilization and disposal techniques. Additional research will focus on methods to deal with the air emissions of metals such as mercury.

ORD will utilize increased resources to provide technical support to the RCRA corrective action community. This will include refining engineering treatment technologies developed under the Superfund program and other existing technologies for use at RCRA correction action sites.

1991 Program

In 1991, the Agency is allocating a total of $16,335,400 supported by 84.9 total workyears for this program, of which $5,008,100 is from the Salaries and Expenses appropriation and $11,327,300 is from the Research and Development appropriation.

Research is being conducted to evaluate treatment processes for wastes likely to be restricted from land disposal. New research is being conducted to define assessment techniques to measure the reduction in quantities of pollutants produced and to identify potential areas for pollution reduction at the source. Research is continued on using solar energy to treat and dispose of waste.

Major issues associated with disposal of municipal and hazardous waste to the land continue to be addressed. Research also characterizes air emissions from hazardous waste facilities (TSDFs). Technical Resource Documents are being updated for use by Regional and State agencies. Expert systems to provide state-of-the-art, cost effective information about the design, operation, closure and post-closure procedures are being developed and maintained.

Studies to provide the technical basis for Agency hazardous incineration policies, regulations, permits, and compliance actions are being conducted. Fundamental research on products of incomplete combustion and heavy metal emissions are also being conducted.

Underground storage tank (UST) research evaluates technologies to identify cost-effective, reliable techniques and equipment for USTs. Research on

identification and evaluation of reliable leak detection methods for underground chemical tanks is being completed and the leak detection facility is being closed.

A new Municipal Innovative Technology Evaluation (MITE) program is underway. Research on municipal solid waste incineration is being conducted. Information is being developed for both industrial processes and incinerators to support regulations.

Congressional Directives: A total of $600,000 is for the Congressionally directed project of Solar and Renewable Fuels.

1990 Accomplishments

In 1990, the Agency obligated a total of $19,113,200 supported by 85.2 total workyears for this program, of which $5,257,700 was from the Salaries and Expenses appropriation and $13,855,500 was from the Research and Development appropriation.

Activities in 1990 included the evaluation of emerging alternative technologies and initiation of a waste minimization/pollution prevention program. Emerging technologies for detecting leaks from petroleum and chemical tank systems were evaluated. Major land disposal issues and various thermal destruction systems techniques were investigated. An Urban Waste Management and Research Center was established at the University of New Orleans. The goal of the center is to provide an integrated approach for solving urban waste problems.

ENVIRONMENTAL PROCESSES AND EFFECTS

1992 Program Request

The Agency requests a total of $9,039,300 supported by 51.5 total workyears for this program, of which $3,560,100 will be for the Salaries and Expenses appropriation and $5,479,200 will be for the Research and Development appropriation. This represents an increase from 1991 of $173,100 and 1.5 workyears for the Salaries and Expenses appropriation, and $2,391,900 for the Research and Development appropriation. The increases are attributed to additional studies on bioremediation, RCRA corrective action, and oil spills, and the transfer of aquifer restoration research from the Water Research Program.

ORD will conduct research on multimedia site assessment models to support hazardous waste management decisions, methods and data for predicting subsurface contamination, and procedures and data for evaluating the impacts of wastes and closure criteria on aquatic habitats and species. Ecological risk assessment will continue to be emphasized in these studies. The research will support evaluation of a model describing metals speciation, pursue performance testing of decision models, develop a predictive model for the toxicity of chemical mixtures, field evaluate saturated and unsaturated subsurface contaminant transport models, and evaluate bioavailability, uptake, and metabolism of hazardous chemicals by plants.

ORD will place new emphasis on developing bioremediation technologies

specifically applicable to RCRA hazardous wastes. This major program will complement ongoing studies being conducted for Superfund sites, but will emphasize biological treatment of known industrial chemicals rather than of complex mixtures.

Researchers will develop techniques for assessing potential ecological risk from oil spills and for evaluating environmental impacts of various control and response techniques to be used for oil spills in marine and freshwater environments. Studies will be conducted and techniques evaluated for the remediation of subsurface contamination of soils and ground water in order to improve and expand the array of possible RCRA corrective action measures. The aquifer restoration research activity, being transferred from the Water Research Program, supports field evaluations of promising in-situ biotransformation techniques to determine the cost-effectiveness of these methods.

Research supporting the underground storage tanks program will be conducted to evaluate approaches for corrective actions including techniques for mobilizing immiscible wastes and techniques for in-situ biological treatment.

1991 Program

In 1991, the Agency is allocating a total of $6,474,300 supported by 50.0 total workyears for this program, of which $3,387,000 is from the Salaries and Expenses appropriation and $3,087,300 is from the Research and Development appropriation.

Research is being conducted in several major areas to support risk assessment, contaminant fate and transport prediction, and corrective action and/or closure activities at hazardous waste sites. Activities include developing both screening-level and more site-specific multimedia assessment methods and data for implementing waste management decisions (including toxicity characteristic/delisting) and evaluating waste management, treatment, and disposal systems based on potential human health and environmental impacts. Important environmental processes that govern transport, transformation, and fate of hazardous wastes in the subsurface are investigated. Field-evaluated methods and data to predict concentrations and to remediate wastes that either escape or are released into the subsurface environment are being developed. Procedures and data are also being developed to evaluate waste characteristics and closure criteria for impacts on aquatic habitats and lifeforms. These methods will be compatible with current OSW regulatory models and testing procedures for human health risk. Testing and field validation is continuing on protocols for determining the biological hazard associated with contaminated soils, water, and sediments. Research also continues on the bioavailability, including uptake, translocation, and metabolism of hazardous chemicals by plants.

Studies continue on determining the applicability and cost-effectiveness of in-situ reclamation techniques to unsaturated-zone and ground-water contamination resulting from leaking underground storage tanks and other hazardous waste sources.

1990 Accomplishments

In 1990, the Agency allocated a total of $7,026,300 supported by 51.2 total workyears for this program, of which $3,479,400 was from the Salaries and Expenses appropriation and $3,546,900 was from the Research and Development appropriation.

Research continued on the development of multimedia site assessment models in support of the RCRA listing/delisting, risk assessment, siting, land disposal restriction, and corrective action programs. Studies on methods for characterizing risk of complex wastes, and on methods and data for predicting subsurface contamination were continued. Increased emphasis was placed on ecological assessments. Transport models for predicting waste concentrations in saturated and unsaturated zones in the subsurface were field evaluated, and progress was made on the development of a model describing speciation of metals. Bioavailability, uptake, and metabolism of hazardous chemicals by plants were investigated.

Research and field testing were conducted on biological, physical, and chemical methods, previously tried at hazardous waste sites, to determine their cost and applicability to cleanup of pollutants from underground storage tanks.

TECHNICAL INFORMATION AND LIAISON

1992 Program Request

The Agency requests a total of $892,100 supported by .1 total workyears for this program, of which $6,000 will be for the Salaries and Expenses appropriation and $886,100 will be for the Research and Development appropriation. This represents an increase from 1991 of $6,000 and .1 workyears for the Salaries and Expenses appropriation, and $46,100 for the Research and Development appropriation. The increases are related to the provision of technical support for RCRA corrective action.

The technical information needs of the Hazardous Waste program will continue to be addressed by providing handbooks and PC expert systems to State and local decision makers in such areas as: 1) disposal of residues; 2) selecting appropriate treatment technologies; and 3) source reduction and recycling. Additional resources will be applied to the provision of technical information to the RCRA corrective action community.

1991 Program

The technical information needs of the Hazardous Waste program will continue to be addressed by providing handbooks and PC expert systems to State and local decision makers. Although the nature of this work does not change dramatically, it is a new funding category in 1991. Formerly this activity was included in the monitoring systems budget.

INTEGRATED HAZARDOUS WASTE RESEARCH

1992 Program Request

The Agency requests $400,000 in the Research and Development appropriation. This represents a reduction of $3,150,000. The reduction is

attributed to the fact that no resources are being requested for the Center for Environmental Management at Tufts University in 1992. Seed money was originally provided 1983. The Agency believes that this Center is now fully established and should seek continued funding on a competitive basis in keeping with the process established to allocated resources to the five competitively selected Hazardous Research Centers supported by EPA. Other sources of funding are available from the private sector as well as other governmental sources.

Funding is provided to support continuing activities at the Institute for Environmental Issues and Policy Assessment, at the Southern University of Louisiana. The Institute will facilitate the transfer of the new knowledge and technologies, conduct studies of environmental risk assessment, and facilitate small and minority business and industry development in the environmental waste management.

1991 Program

In 1991, the Agency is allocating a total of $3,550,000 supported by no workyears for this program, all of which is from the Research and Development appropriation.

The program of work at the Center for Environmental Management is addressing a wide variety of research, education and public policy environmental issues. Several on-going projects will be completed. New activities related to pollution prevention, international environmental policy and environmental health policy and education will be initiated.

An Institute for Environmental Issues and Policy Assessment at the Center for Energy and Environmental Studies was established at the Southern University of Louisiana. The Institute will focus on technology transfer and research relating to hazardous waste issues.

Congressional Directives: A total of $400,000 is for the Congressionally directed project of Southern University of Louisiana Environmental Issues and Policy Assessment Institute; A total of $3,150,000 is for the Congressionally directed project of the Center for Environmental Management at Tufts University.

1990 Accomplishments

In 1990, the Agency obligated a total of $2,435,100 supported by no workyears, all of which is from the Research and Development appropriation.

These resources funded a program at Tufts to continue funding research projects on health effects, monitoring systems, alternative technologies, risk communication and waste minimization.

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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## HAZARDOUS WASTE
### Waste Management Regulations, Guidelines & Policies

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | | |
| **PROGRAM** | | | | | | |
| Regulations, Guidelines & Policies-Hazardous Waste | | | | | | |
| Salaries & Expenses | | $17,603.4 | $21,560.6 | $21,560.6 | $23,098.6 | $1,538.0 |
| Abatement Control and Compliance | | $35,773.4 | $42,754.5 | $42,754.5 | $45,429.5 | $2,675.0 |
| | TOTAL | $53,376.8 | $64,315.1 | $64,315.1 | $68,528.1 | $4,213.0 |
| RCRA Regulatory Program - Office of Air and Radiation | | | | | | |
| Salaries & Expenses | | $629.7 | $848.0 | $848.0 | $874.6 | $26.6 |
| Abatement Control and Compliance | | $2,956.9 | $3,073.3 | $3,073.3 | $3,073.3 | |
| | TOTAL | $3,586.6 | $3,921.3 | $3,921.3 | $3,947.9 | $26.6 |
| RCRA Regulatory Program - Office of Water | | | | | | |
| Salaries & Expenses | | $2,221.8 | $1,820.4 | $1,820.4 | $1,110.2 | -$710.2 |
| Abatement Control and Compliance | | $4,406.5 | $3,966.5 | $3,966.5 | $2,420.5 | -$1,546.0 |
| | TOTAL | $6,628.3 | $5,786.9 | $5,786.9 | $3,530.7 | -$2,256.2 |
| Regulations, Guidelines and Policies - UST | | | | | | |
| Salaries & Expenses | | $2,938.2 | $3,794.4 | $3,794.4 | $4,107.4 | $313.0 |
| Abatement Control and Compliance | | $3,392.3 | $4,165.8 | $4,165.8 | $4,165.8 | |
| | TOTAL | $6,330.5 | $7,960.2 | $7,960.2 | $8,273.2 | $313.0 |
| **TOTAL:** | | | | | | |
| Salaries & Expenses | | $23,393.1 | $28,023.4 | $28,023.4 | $29,190.8 | $1,167.4 |
| Abatement Control and Compliance | | $46,529.1 | $53,960.1 | $53,960.1 | $55,089.1 | $1,129.0 |
| Waste Management Regulations, Guidelines & Policies | TOTAL | $69,922.2 | $81,983.5 | $81,983.5 | $84,279.9 | $2,296.4 |
| **PERMANENT WORKYEARS** | | | | | | |
| Regulations, Guidelines & Policies-Hazardous Waste | | 232.6 | 266.3 | 266.3 | 271.3 | 5.0 |
| RCRA Regulatory Program - Office of Air and Radiation | | 11.0 | 13.0 | 13.0 | 13.0 | 0.0 |

HAZARDOUS WASTE

Waste Management Regulations, Guidelines & Policies

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| RCRA Regulatory Program - Office of Water | 45.3 | 37.6 | 37.6 | 20.5 | -17.1 |
| Regulations, Guidelines and Policies - UST | 50.4 | 63.9 | 63.9 | 66.4 | 2.5 |
| TOTAL PERMANENT WORKYEARS | 339.3 | 380.8 | 380.8 | 371.2 | -9.6 |
| TOTAL WORKYEARS | | | | | |
| Regulations, Guidelines & Policies-Hazardous Waste | 240.2 | 266.3 | 266.3 | 271.3 | 5.0 |
| RCRA Regulatory Program - Office of Air and Radiation | 11.5 | 13.0 | 13.0 | 13.0 | 0.0 |
| RCRA Regulatory Program - Office of Water | 46.2 | 38.4 | 38.4 | 20.5 | -17.9 |
| Regulations, Guidelines and Policies - UST | 55.6 | 66.4 | 66.4 | 66.4 | 0.0 |
| TOTAL WORKYEARS | 353.5 | 384.1 | 384.1 | 371.2 | -12.9 |

## Waste Management Regulations, Guidelines, and Policies

Budget Request

The Agency requests a total of $84,279,900 and 371.2 total workyears for 1992, an increase of $2,296,400 and a decrease of 12.9 total workyears from 1991. Of the request, $29,190,800 will be for the Salaries and Expenses appropriation and $55,089,100 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $1,167,400 in the Salaries and Expenses appropriation, and an increase of $1,129,000 in the Abatement, Control and Compliance appropriation. The decrease in workyears represents shifting resources from RCRA Hazardous Waste regulations to Water Quality permits and enforcement programs.

REGULATIONS, GUIDELINES, AND POLICIES -- HAZARDOUS WASTE

1992 Program Request

The Agency requests a total of $68,528,100 and 271.3 total workyears for this program, of which $23,098,600 will be for the Salaries and Expenses appropriation and $45,429,500 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $1,538,000 for Salaries and Expenses, $2,675,000 for Abatement, Control and Compliance, and 5.0 total workyears from the 1991 levels. The increase in total workyears and Abatement, Control and Compliance supports the RCRA component of the Agency's Environmental Data Initiative and the reevaluation of certain RCRA regulations. The increase in Salaries and Expenses reflects the increase in workyears and increased personnel and support costs.

In 1992, the Agency will continue the development and promulgation of major regulations, most of which are dictated by statutory mandates and court orders. Included among these are HSWA mandated waste listings. The Agency will significantly amend the universe of wastes regulated under Subtitle C with the promulgation of listings for azo dyes, linuron, bromicil, chlorinated aromatics, coke by-products, and solvents. In addition, EPA will begin to address the need for better waste management data through the development of an environmental data initiative. Finally, the Agency will propose land disposal restrictions for newly-listed wastes, and guidelines for mixed waste.

The Agency will continue its pollution prevention efforts by coordinating waste minimization activities, providing technical assistance, conducting a recycling campaign for public media, proposing national procurement guidelines, and redefining solid waste. International partnership will remain a high item on the Agency agenda with the proposal of the hazardous waste export rule.

The Agency will continue efforts to address non-hazardous (Subtitle D) waste issues by serving as a technical clearinghouse for management information, options, and guidelines. The Agency will also propose a used oil listing and used oil management standards. States' assistance in the development of solid waste management plans and production of non-hazardous waste guidelines will

continue. EPA will promulgate a rule for the authorization of Indian Tribes, and continue to provide assistance to states and Regions in working with Indian Tribes on non-hazardous waste issues. In addition, the Agency will promulgat[redacted] a rule for state program approval under Subtitle D.

The Agency will continue to develop and disseminate to Regional and state permit writers technical guidance on new regulations, including guidance for state programs, corrective action, waste combustion, and post-closure and clean closure.

1991 Program

The Agency is allocating a total of $64,315,100 and 266.3 total workyears for this program, of which $21,560,600 is from the Salaries and Expenses appropriation and $42,754,500 is from the Abatement, Control, and Compliance appropriation.

The Agency is continuing to develop and promulgate major regulations required by HSWA. A regulation revising hazardous waste facility location standards will be proposed. Regulations to list primary treatment sludge from petroleum refining processes, and wastes from wood preserving and surface protection industries will be finalized. The Agency will address the growing national concern over waste combustion by finalizing a rule for burning hazardous waste in boilers and industrial furnaces, and issuing mixed waste combustion guidance.

The Agency serves as a source for non-hazardous waste management information, options, and guidelines. Activities include developing a[redacted] disseminating technical and general guidance to assist states, local governments, and citizens in implementing recycling and source reduction programs. The Agency is developing large volume waste management strategies and programs. The Agency will continue its medical waste efforts by producing an interim report to Congress, and providing technical support, training, and outreach assistance to states involved with the medical waste tracking demonstration program.

The Agency continues to process HSWA authorization packages, and develop and disseminate to Regional and state permit writers technical guidance on new regulations, including procurement, corrective action, mixed waste guidelines, and a permit policy compendium.

Congressional Directives. A total of $2,325,000 is for the Congressionally directed projects of a scrap tire recycling demonstration project in New Jersey, a New Jersey recycling demonstration project, a waste management testing training program at St. Vincent College (Latrobe, PA), and a computerized waste exchange network project.

1990 Accomplishments

In 1990, the Agency obligated a total of $53,376,800 supported by 240.[redacted] total workyears for this program, of which $17,603,400 was from the Salaries and Expenses appropriation and $35,773,400 was from the Abatement, Control and Compliance appropriation.

The Agency addressed important HSWA and non-HSWA regulatory revisions. Treatment standards for the Third Third of the wastes scheduled for the Land Disposal Restrictions program were completed and work began on the land disposal restrictions for newly-listed wastes. The Agency amended the universe of wastes subject to Subtitle C management standards by promulgating listings for chlorinated aliphatics and methyl bromide, proposing a rule to regulate the burning of hazardous waste in boilers and industrial furnaces, and clarifying the status of mineral processing wastes. In addition, the Agency finalized the Organic Toxicity Characteristic, increasing the number of wastes regulated as hazardous.

The Agency continued to develop a nationwide program for the safe management of non-hazardous wastes. In support of pollution prevention objectives, the Agency provided assistance and information to government, industry, and consumers to foster increased recycling and source reduction. The Agency produced three Reports to Congress: Special Wastes from Mineral Processing, Methods to Manage and Control Plastic Waste, and Medical Waste Management in the United States (First Interim Report).

REGULATIONS, GUIDELINES, AND POLICIES - OFFICE OF AIR AND RADIATION

1992 Program Request

The Agency requests a total of $3,947,900 supported by 13.0 total workyears for this program, of which $874.6 will be for the Salaries and Expenses appropriation and $3,073,300 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $26,600 for the Salaries and Expenses appropriation, and no change in the Abatement, Control and Compliance appropriation, and no change in total workyears from 1991.

In 1992 the program will continue to support the promulgation of regulations for organic emissions from the seven types of hazardous waste treatment storage and disposal facility (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 1992 rule. Resources will be provided for data collection to promulgate regulations for these toxic pollutants in a future year. This program will also provide technical support for states and EPA Regional offices in implementing the TSDF regulations.

1991 Program

In 1991 the Agency is allocating a total of $3,921,300 supported by 13.0 total workyears to this program, of which $848,000 is from the Salaries and Expenses appropriation and $3,073,300 is from the Abatement, Control and Compliance appropriation.

In 1991 efforts are continuing on the development of standards for the seven types of TSDF area sources listed above. These sources have been estimated to emit 2.0 million tons per year of volatile organic compounds and toxic air pollutants. Toxic emissions from TSDFs have been associated with up to 140 cancer deaths per year. Standards have been promulgated for equipment leaks at

these facilities. Workshops to provide technical support for states and EPA Regional offices in implementing the TSDF regulations promulgated in 1990 will be held in eight cities in 1991. Proposal of additional regulations for all other sources is currently scheduled for early 1991. Additional work on developing regulations for individual hazardous air pollutants from TSDFs will be continued in 1991.

1990 Accomplishments

In 1990 the Agency obligated a total of $3,586,600 supported by 11.5 total workyears, of which $629,700 was from the Salaries and Expenses appropriation and $2,956,900 was from the Abatement, Control and Compliance appropriation.

In 1990 standards for volatile organic emissions from equipment leaks and waste solvent recovery process vents at TSDFs were promulgated under RCRA. Workshops to provide technical support for states and EPA Regional offices in implementing the TSDF regulations were developed. Workshops were held in Elizabeth, New Jersey, and Boston, Massachusetts during 1990.

REGULATIONS, GUIDELINES, AND POLICIES -- WATER

1992 Program Request

In 1992, the Agency requests a total of $3,530,700 supported by 20 total workyears for this program, of which $1,110,200 will be for the Salaries and Expenses appropriation and $2,420,500 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of $710,200 in Salaries and Expenses, a decrease of $1,546,000 in Abatement, Control and Compliance, and a decrease of 18 workyears. The decreases reflect a reduction in the number of publicly owned treatment works (POTWs) requiring corrective action, completion of the double-liner waiver assessment, a decline in the level of oversight needed to review facility exemption petitions, and a resulting decline in personnel and suppoort costs.

In 1992, information gathering and sampling of specific Domestic Sewage Study (DSS) industries will continue. The Agency will continue to develop effluent limitations, guidelines and standards for the machinery manufacturing and rebuilding category, as well as the coastal and offshore segments of the oil and gas extraction category. EPA will continue to provide assistance on additional local limits, particularly in relation to new sludge technical regulations and on POTW enforcement response plans, and will continue development of analytical methods and analytical service support.

The Regions will increase oversight of State-issued UIC Permits and litigation defense to ensure compliance with regulatory requirements and protection of public health and the environment. Defense against litigation challenging prior approvals or denials of petitions will be a continuing workload.

1991 Program

In 1991, the Agency is allocating a total of $5,786,900 supported by 38 total workyears for this program, of which $1,820,400 is from the Salaries and

Expenses appropriation and $3,966,500 is from the Abatement,, Control and Compliance appropriation.

One of the Agency's major pollution prevention activities is improving the pretreatment program for controlling hazardous wastes from industrial users of POTWs. Information gathering and sampling of specific industries, analytical methods development and analytical service support is continuing.

The Agency is continuing to develop effluent limitations, guidelines and standards for several industries. EPA has issued technical guidance and provided assistance on additional local limits, particularly in relation to new sludge technical regulations and on POTW enforcement response plans.

Regions and states are revising POTW permits to include requirements for spill prevention plans, sewage sludge, whole effluent toxicity screening or testing and modification of pretreatment program implementation. EPA and states have continued pretreatment audits and inspections of POTWs and review and approval of new local limits for controlling hazardous pollutants in discharges and sludges. EPA has completed issuance of rider permits to incorporate follow-up actions where necessary. EPA is assessing compliance and has taken enforcement action to ensure reporting requirements and other RCRA permit-by-rule requirements are satisfied. Work is continuing on the completion of ongoing RCRA facility assessments and remedial investigations.

The Regions continue to review new petitions and those carried over from 1990. Petitions are expected from the following types of facilities: those injecting previously excluded mining wastes (Bevill wastes); those injecting wastes classified as hazardous under the Toxic Characteristic Leaching Procedure, including modifications for those with previously approved petitions; and any new facilities wishing to inject hazardous wastes. Defense against litigation challenging prior approvals or denials of petitions is a continuing workload.

In addition, the Regions continue to review permit applications for Class I wells in direct-implementation States and are increasing their oversight of UIC permits issued by primacy States to ensure that these requirements are fully implemented. A corrective action program is being implemented for Class I hazardous waste injection wells including assessments of prior continuing releases.

1990 Accomplishments

In 1990, the Agency obligated a total of $6,628,300 supported by 45 total workyears for this program, of which $2,221,800 was from the Salaries and Expenses and $4,406,500 was from the Abatement, Control and Compliance appropriations.

The Agency continued gathering information and sampling specific DSS industries. Wastewaters were screened and analyzed for hazardous constituents. The Agency continued development of effluent limitations, guidelines and standards for several DSS industries (hazardous waste treatment, pharmaceuticals manufacturing, etc.). The Agency formulated guidance and tracking, overseeing and assisting the new specific discharge prohibitions, including ignitability/explosivity and reactivity/fume toxicity. The Agency also

established hazardous waste discharge notification improvements, numerical discharge limits or other controls to protect workers' health and safety.

EPA continued to implement the corrective action requirements for a small number of POTWs and focused on control of hazardous and toxic pollutants through implementation of recommendations from the DSS. Pretreatment audits and inspections focus on identification of POTW corrective action requirements and appropriate follow-up assessments and investigations continued.

Headquarters continued to develop guidance and provided technical advice and assistance for regions and states in the implementation of hazardous waste disposal restrictions, reviewing facility petitions and enforcing the loss of facility interim status.

EPA reviewed petitions and revised or modified hazardous waste injection well permits from those operators of hazardous waste injection wells seeking exemptions from the injection ban. The Agency provided technical assistance in developing geologic data. Modeling of waste fate and transport was under development. Regional UIC permit writers conducted corrective action investigations for Class I hazardous waste wells, giving priority to wells with permits issued after November, 1984, and without schedules for corrective action. Regions also continued to review petitions from operators of hazardous waste injection wells seeking exemptions from the injection ban under Part 148.

REGULATIONS, GUIDELINES, AND POLICIES -- UNDERGROUND STORAGE TANKS (UST)

1992 Program Request

The Agency requests a total of $8,273,200 supported by 66.4 total workyears for this program of which $4,107,400 will be for the Salaries and Expenses appropriation and $4,165,800 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $313,000 for the Salaries and Expenses appropriation to support increased personnel costs. A shift of resources from regulation development to implementation will provide support for states and Indian tribes.

The Agency will implement a national program by ensuring that states continue to work toward meeting the conditions for program approval. The number of state programs receiving Federal approval will increase as they complete the legislative and regulatory changes required to ensure their programs are no less stringent than the Federal program, and as they develop adequate enforcement authorities and capacity. For states not yet applying for program approval, the Agency will continue to assist in the development of their UST programs.

The Agency will increase outreach and provide compliance and enforcement assistance to tribal leaders and owner/operators with tanks on Indian lands.

Outreach efforts will be enhanced to promote voluntary compliance through education of the public and the regulated community.

1991 Program

The Agency is allocating a total of $7,960,200 supported by 66.4 workyears of which 3,794,400 is from the Salaries and Expenses appropriation and $4,165,800 is from the Abatement, Control and Compliance appropriation.

The basic approach to accomplishing the environmental goals of the UST program is to develop, support, and improve state and local programs -- where day-to-day implementation of the program occurs. The Agency's mission is to help implement the program more effectively by promoting more streamlined, cost effective methods and procedures. As the technical and leak detection regulations phase in during this fiscal year, the Agency will focus its efforts on assessing compliance with the first phase-in group. To facilitate compliance, the Agency is developing standard test procedures for leak detection equipment that will allow tank owners to choose equipment that meets EPA requirements. A nationwide marketing campaign is being conducted to promote resource efficient methods for states to monitor owner/operator compliance and to take enforcement actions against violators. Videos on installation and tank closures have been completed, and a video on conducting UST inspections and an interactive training video program have been started.

The Agency is continuing to support state regulation development and is encouraging states to apply for program approval. The Agency is also helping states manage their increasing workload by providing technical advice on state data management information systems.

The Agency is working with owner/operators and municipalities to meet the Federal financial responsibility requirements by assisting municipalities in their efforts to provide guarantees to local owner/operators and by assisting states in developing state assurance programs and loan funds. The loan program would be used by tank owners to upgrade or replace their tanks, preventing many leaks from ever occurring. The assurance programs help owner/operators to meet their financial responsibility requirements. EPA is reviewing state funds as they are submitted.

1990 Accomplishments

In 1990, the Agency has obligated $6,330,500 supported by 55.6 workyears, of which $2,938,200 is from the Salaries and Expenses appropriation and $3,392,300 is 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 regulations on meeting the financial responsibility requirements. The Agency developed supplemental policies and guidance on the processes 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.

Developmental tools such as videos demonstrating correct procedures for tank installations and closure were finalized and distributed. Several brochures such as Straight Talk on Tanks, Field Measurements; Dependable Data When You Need

It, Commitment to Cooperation; Franchising the UST Program and a series of 7 documents outlining leak detection methods were developed and distributed.

The Agency provided on-going support and services to state programs. States needs were identified through analysis of state processes using Total Quality Management techniques. As a result of these studies, the Agency continued 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. The Agency also assisted the states in developing communication tools such as the File Transfer System - a computer technology used in transferring documents from the Region to Headquarters and States and vice versa.

The Agency's enforcement strategy emphasized voluntary compliance but also promoted innovative techniques to achieve successful enforcement action when required. A penalty policy was completed to ensure consistent application of penalties in federal enforcement cases.

## HAZARDOUS WASTE
### Financial Assistance

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | | |
| **PROGRAM** | | | | | | |
| Underground Storage Tanks State Grants | | | | | | |
| Abatement Control and Compliance | | $8,954.8 | $9,000.0 | $9,000.0 | $9,000.0 | 0.0 |
| | TOTAL | $8,954.8 | $9,000.0 | $9,000.0 | $9,000.0 | 0.0 |
| Hazardous Waste Management Financial Assistance To States | | | | | | |
| Abatement Control and Compliance | | $68,403.5 | $82,967.0 | $82,967.0 | $90,292.0 | $7,325.0 |
| | TOTAL | $68,403.5 | $82,967.0 | $82,967.0 | $90,292.0 | $7,325.0 |
| TOTAL: | | | | | | |
| Abatement Control and Compliance | | $77,358.3 | $91,967.0 | $91,967.0 | $99,292.0 | $7,325.0 |
| Financial Assistance | TOTAL | $77,358.3 | $91,967.0 | $91,967.0 | $99,292.0 | $7,325.0 |

## HAZARDOUS WASTE

### Financial Assistance

Budget Request

The Agency requests a total of $99,292,000 for this program for the Abatement, Control and Compliance appropriation. This is an increase of $7,325,000 from the level provided in 1991.

HAZARDOUS WASTE MANAGEMENT FINANCIAL ASSISTANCE TO STATES

1992 Program Request

The Agency requests a total of $90,292,000 for this program, all of which will be for the Abatement, Control and Compliance appropriation. This represents an increase of $7,325,000 to support the expanded workload associated with the increasing RCRA handler universe, and the Agency's Great Lakes and Pollution Prevention initiatives.

In 1992, the Agency will provide funding to assist the states in their continued efforts to develop legislation and regulations to achieve equivalence with the Federal hazardous waste management program. Almost all states will be authorized for the base RCRA program and will develop the capability to adopt corrective action and other provisions of HSWA.

The Regions will continue working with states to address environmentally significant facilities. Increased resources are provided for processing post-closure permits for land disposal facilities in order to ensure monitoring and other post-closure requirements, and to address potential contamination at these facilities. The Regions will target permitting at the most environmentally significant storage and treatment facilities. Resources are provided for the Regions to work with states to maintain hazardous waste disposal and incineration capacity by permitting environmentally sound new facilities. The states will process modifications to operating permits, which will need revisions due to changes in facility processes, facility expansions, and the need to incorporate corrective action provisions as remediation activities progress. The states will continue to review and approve closure plans for incinerators and storage and treatment facilities, and will process appeals to permit decisions, as necessary.

The states will conduct the bulk of the compliance monitoring inspections and will place greater emphasis on conducting inspections of new RCRA handlers resulting from new rules and listings. The new rules and listings include the organic toxicity characteristic and hazardous waste fuel rules, as well as the mixed waste, and wood preserving listings. The states within the Great Lakes Basin will conduct intensified inspections and initiate enforcement and corrective action when appropriate.

The Agency and the states will implement an integrated RCRA enforcement pollution prevention program which will include conducting targeted inspections of generators, initiating searches of facilities operating illegally outside the RCRA system, as well as integrating pollution prevention conditions into enforcement settlements where possible.

The states will continue to place increased emphasis on addressing the worst facilities by completing facility assessments and implementing national prioritization criteria. Long-term corrective measures will continue where already imposed, but the focus will be on facilities posing the most significant threat to human health and the environment. Where appropriate, facility stabilization will be encouraged.

Information management resources will continue to fund national implementation of the Resource Conservation and Recovery Information System (RCRIS), the hazardous waste data management system that will greatly expand the states' and EPA's ability to input and retrieve information critical to successful program management.

1991 Program

In 1991, the Agency is allocating a total of $82,967,000 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. The states are proposing legislation and upgrading regulations to achieve equivalence with the Federal hazardous waste management program, and are applying to EPA for authorization to administer the program.

Permitting efforts have been directed toward permitting environmentally significant storage and treatment facilities, and toward processing modifications to existing permits. The states are emphasizing compliance monitoring and enforcement efforts to ensure adequate environmental safeguards covering the generation, transportation, and disposal of hazardous waste. To emphasize the implementation of the land ban restrictions, states will increase the number of inspections and the level of oversight activity at small quantity generators and other affected facilities. The states are conducting facility assessments to ensure that corrective action activities are focused on those facilities that offer the greatest risk reduction. As releases are identified, states are ensuring that owners/operators address the contamination.

1990 Accomplishments

In 1990, the Agency obligated a total of $68,403,500 for this program, all of which was from the Abatement, Control and Compliance appropriation.

In 1990, states developed legislation and regulations to achieve equivalence with the Federal hazardous waste management program. States were granted authority to administer important HSWA regulations. The states and Regions worked jointly on processing permits for those HSWA provisions for which states were not authorized, particularly corrective action.

As required, states conducted biennial inspections at all operating land disposal facilities, and at closed land disposal and operating storage and treatment facilities. Enforcement actions were taken against handlers that presented the greatest threat to human health and the environment.

The states placed increased emphasis on conducting facility assessments to ensure that the most environmentally significant facilities were addressed first. The states focused their corrective action resources to ensure that

owners/operators conducted facility investigations in compliance with the terms of permits or orders. The states placed priority on new facility investigations at environmentally significant closing and closed facilities, as well as at permitted facilities.

UNDERGROUND STORAGE TANKS GRANTS

1992 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 1991.

This request provides states with a funding base to develop and implement their underground storage tanks (UST) programs. States who have completed the necessary legislative and regulatory changes will apply for state program approval. Concurrently, these states will build program capabilities to enable them to administer the entire Federal program. Other states will continue to develop and update their legislative and regulatory standards, including technical standards and leak detection, financial responsibility, and corrective action requirements. In addition, states will continue to work on achieving compliance with tank closure and pressurized piping requirements.

1991 Program

The Agency is allocating a total of $9,000,000 all of which is from the Abatement, Control and Compliance appropriation.

States use these grant funds for core program development with a focus on the development of an effective prevention program. Funded activities include development of notification and data systems, as well as requirements for new tank installation, leak detection, and tank closure. States are currently implementing portions of the federal regulations.

To supplement Federal funds, some states have developed independent funding sources from tank fees, state taxes, and gasoline taxes; other funding mechanisms are still in the process of development. Independent funding is essential to the success of state prevention programs as UST grant funds provide only "seed money" of about $162,000 per state.

The phase-in of the financial responsibility and leak detection regulations will continue to increase the states' workload as USTs that are unable to meet applicable requirements must be either upgraded or closed. The states will process and/or review all upgrades and closures.

1990 Accomplishments

In 1990, the Agency obligated $8,954,800 for this program, all of which was from the Abatement, Control and Compliance appropriation.

UST grant funds were used primarily to stimulate development of state UST programs. Most states have initiated legislative and regulatory changes necessary for the state program to be no less stringent than Federal standards. Eleven states completed this process in 1990 and began the state program approval

process. In addition, many states made significant strides in developing their compliance and enforcement programs.

## HAZARDOUS WASTE
### Waste Management Strategies Implementation

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| PROGRAM | | | | | | |
| Hazardous Waste Management Regulatory Strategies Implementation | | | | | | |
| Salaries & Expenses | | $16,159.4 | $19,956.0 | $19,955.8 | $22,251.8 | $2,296.0 |
| Abatement Control and Compliance | | $9,988.5 | $11,599.7 | $11,599.7 | $11,599.7 | |
| | TOTAL | $26,147.9 | $31,555.7 | $31,555.5 | $33,851.5 | $2,296.0 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $16,159.4 | $19,956.0 | $19,955.8 | $22,251.8 | $2,296.0 |
| Abatement Control and Compliance | | $9,988.5 | $11,599.7 | $11,599.7 | $11,599.7 | |
| Waste Management Strategies Implementation | TOTAL | $26,147.9 | $31,555.7 | $31,555.5 | $33,851.5 | $2,296.0 |
| PERMANENT WORKYEARS | | | | | | |
| Hazardous Waste Management Regulatory Strategies Implementation | | 331.7 | 391.1 | 391.1 | 418.1 | 27.0 |
| TOTAL PERMANENT WORKYEARS | | 331.7 | 391.1 | 391.1 | 418.1 | 27.0 |
| TOTAL WORKYEARS | | | | | | |
| Hazardous Waste Management Regulatory Strategies Implementation | | 352.3 | 418.1 | 418.1 | 418.1 | 0.0 |
| TOTAL WORKYEARS | | 352.3 | 418.1 | 418.1 | 418.1 | 0.0 |

## Hazardous Waste Management Strategies Implementation

Budget Request

The Agency requests a total of $33,851,500 supported by 418.1 total workyears for 1992, an increase of $2,296,000 from 1991. Of the request, $22,251,800 will be for the Salaries and Expenses appropriation and $11,599,700 will be for the Abatement, Control and Compliance appropriation. The $2,296,000 increase will be for the Salaries and Expenses appropriation.

HAZARDOUS WASTE MANAGEMENT STRATEGIES IMPLEMENTATION

1992 Program Request

The Agency requests a total of $33,851,500 and 418.1 total workyears for this program, of which $22,251,800 will be for the Salaries and Expenses appropriation and $11,599,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $2,296,000 for the Salaries and Expenses appropriation. The increase is requested to fund the Federal workforce needed to implement the President's program in 1992.

The Regions will continue to encourage states to develop and maintain hazardous waste management programs. This support from the Regions, along with funding available to the states through the Hazardous Waste Management Financial Assistance program, is designed to develop state capability to effectively manage hazardous waste programs. Almost all states will be authorized for the pre-HSWA program and will be working toward authorization for HSWA provisions such as corrective action.

The Regions will continue working with states to address environmentally significant facilities. Resources are provided to continue increasing the emphasis on processing post-closure permits for land disposal facilities in order to ensure that monitoring and other post-closure requirements are adhered to, and to address potential contamination at these facilities. The Regions will target permitting at the most environmentally significant storage and treatment facilities. Resources are provided for the Regions to work with states to maintain hazardous waste disposal and incineration capacity by permitting environmentally sound new facilities. The Regions will continue to process modifications to operating permits, which will need revisions due to changes in facility processes, facility expansions, and the need to incorporate corrective action provisions as cleanup activities progress. The Regions will continue to review and approve closure plans for hazardous waste facilities and will process appeals to permit decisions as necessary.

The Regions will conduct municipal non-hazardous waste (Subtitle D) activities. The Regions will provide technical and financial support to states and other eligible organizations, such as municipalities and universities, that are interested in pursuing unique projects that will support the recycling and source reduction goals of the Agency's Agenda for Action. The Agency will assist states as they revise statutes and regulations in accordance with the new

national Subtitle D criteria, and will review State program revision packages. Large volume waste will be addressed through targeted cooperative agreements with states. Resources will fund investigations of state mining waste and oil and gas production waste programs in order to develop nationally consistent regulatory special waste programs.

Information management resources will fund implementation of the RCRA Information System (RCRIS), the hazardous waste data management system that will greatly expand EPA's and the states' ability to enter and retrieve information critical to successful program management.

1991 Program

In 1991, the Agency is allocating a total of $31,555,500 and 418.1 total workyears for this program, of which $19,955,800 is from the Salaries and Expenses appropriation and $11,599,700 is from the Abatement, Control and Compliance appropriation.

Permitting efforts are focused on ensuring adequate post-closure care of land disposal facility closure plans in 1991, as well as processing environmentally significant storage and treatment facility permits.

The Regions are working jointly with the states on all aspects of the hazardous waste program. The Regions process those portions of permits for which states are not yet authorized, and are providing technical oversight of state work. The Regions are supporting the enhancement of state capability by providing assistance with state regulatory and legislative development. This provides a framework for ensuring national program consistency and will ultimately allow states to run the hazardous waste program independently. The Regions are working with states and other organizations, through technical and financial assistance, to implement the recommendations of the Agency's solid waste Agenda for Action.

1990 Accomplishments

In 1990, the Agency obligated a total of $26,147,900 supported by 352.3 total workyears for this program, of which $16,159,400 was from the Salaries and Expenses appropriation and $9,988,500 from the Abatement Control and Compliance appropriation.

In 1990, the Regions supported the states in the development of hazardous waste management programs equivalent to the Federal program. With 47 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 non-authorized states worked together to process permit applications with HSWA provisions. Achievements included processing the remainder of incineration facility permits subject to the November 1989 deadline.

Other important efforts included increasing the processing of environmentally-significant storage and treatment facility permits and increasing

emphasis on issuing permits to ensure adequate post-closure care of land disposal facilities.

## HAZARDOUS WASTE
### Emergency Planning Community Right To Know

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Emergency Planning Community Right To Know | | | | | |
| Salaries & Expenses | $1,890.3 | $2,801.9 | $2,801.9 | $4,698.6 | $1,896.7 |
| Abatement Control and Compliance | $4,733.0 | $4,438.0 | $4,438.0 | $3,938.0 | -$500.0 |
| TOTAL | $6,623.3 | $7,239.9 | $7,239.9 | $8,636.6 | $1,396.7 |
| **TOTAL:** | | | | | |
| Salaries & Expenses | $1,890.3 | $2,801.9 | $2,801.9 | $4,698.6 | $1,896.7 |
| Abatement Control and Compliance | $4,733.0 | $4,438.0 | $4,438.0 | $3,938.0 | -$500.0 |
| Emergency Planning Community Right To Know TOTAL | $6,623.3 | $7,239.9 | $7,239.9 | $8,636.6 | $1,396.7 |
| **PERMANENT WORKYEARS** | | | | | |
| Emergency Planning Community Right To Know | 30.9 | 41.8 | 41.8 | 57.5 | 15.7 |
| TOTAL PERMANENT WORKYEARS | 30.9 | 41.8 | 41.8 | 57.5 | 15.7 |
| **TOTAL WORKYEARS** | | | | | |
| Emergency Planning Community Right To Know | 32.6 | 44.5 | 44.5 | 57.5 | 13.0 |
| TOTAL WORKYEARS | 32.6 | 44.5 | 44.5 | 57.5 | 13.0 |

## Emergency Planning and Community Right-to-Know Act and Clean Air Act -- Accidental Release Provisions

Budget Request

The Agency requests a total of $8,636,600 supported by 57.5 total workyears for 1992. Of the request, $6,146,300 and 44.5 workyears will be for the Emergency Planning and Community Right-to-Know program. Of the $6,146,300, $3,208,300 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 total decrease of $1,093,600 for this program. A total of $2,490,300 supported by 13.0 total workyears will be for implementation of the Clean Air Act Accidental Release Provisions. Of the $2,490,300, $1,490,300 will be for the Salaries and Expenses appropriation and $1,000,000 will be for the Abatement, Control and Compliance appropriation. 1992 is the first year the Agency is requesting resources for implementation of these Clean Air Act provisions.

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW -- TITLE III

1992 Program Request

The Agency requests a total of $6,146,300 supported by 44.5 total workyears for 1992. Of the request, $3,208,300 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 total decrease of $1,093,600 from 1991. The decrease in dollars will come from the area of emergency planning support (technical assistance, training, and guidance) to the states.

The Agency will continue to focus on building the infrastructure of state and local governments to assist in their efforts to implement the emergency preparedness program. The program will assist state and local governments in updating and improving their emergency response plans. In addition, support will be provided to update emergency planning guidance, review and modify instructor training programs for state and local groups, develop and present workshops on chemical hazard analysis, and develop simulation exercises to test emergency response plans. EPA will also develop guidance and assist states in organizing and utilizing hazardous chemical information received from reporting facilities, as well as provide tools and materials to enable the public to better understand the risks involved with hazardous chemicals.

Chemical emergency planning requires a cooperative effort between state and local governments working in partnership with industry and the Federal government. Therefore, the Agency will concentrate on enhancing relationships with public and private sector organizations such as the National Governors' Association, International City Management Association and the Chemical Manufacturers' Association. The program will also work to build and strengthen the participation of the American Red Cross, fire service organizations, as well as medical and public health officials. Participation by each member of this partnership is essential if full compliance with the reporting requirements and involvement of the community is to be achieved.

investigation of violations of the emergency release notification provisions, inventory reporting, and Material Safety Data Sheet submissions, and expects to complete more administrative penalty cases against violators of these requirements.

The Agency is also providing direct support to states and local communities in their efforts to implement the Title III program. While most of the designated planning districts have submitted their initial emergency response plans, they are in varying stages of the implementation process. EPA is providing states and priority area communities with guidance, technical assistance and training to review, test and update their plans. For those communities that do not yet have emergency response plans, EPA is working with them to achieve compliance.

EPA continues to evaluate chemicals against the criteria of the extremely hazardous substances (EHS) list and is currently reviewing petitions to delete chemicals. The Agency is also completing a final rule to consider additions to the EHS list based upon the physical hazards posed by a chemical. EPA continues to receive, process and evaluate Title III trade secrecy claims.

Congressional Directives. A total of 7.5 workyears and $1,500,000 is for implementing the Emergency Planning and Community Right-to-Know Act, including emergency planning provisions.

In response to this directive, the Agency is focusing on building the infrastructure state and local governments require to take ownership and implement the emergency preparedness program. A significantly increased level of emergency planning technical assistance and training will be provided to assist states and local communities in: 1) developing, testing and improving their emergency response plans. The program will review and update tools and materials, such as emergency planning guidance and instructor training programs; 2) conducting hazards analysis to identify a community's chemical hazards and its vulnerability to harm if a release occurs; 3) providing information management to assist states and local governments in organizing and utilizing hazardous chemical information received from facilities; 4) communicating to the public about the risks involved in the presence of chemicals in their communities; and 5) building state enforcement capabilities.

To complement these efforts, the program is also initiating a program to help states enhance the capabilities of their Local Emergency Planning Committees (LEPCs). The program will provide assistance to states and Indian Tribes to develop projects in such areas as hazards analysis, emergency plan testing, information management, enforcement/compliance and risk communication. Results of these projects will serve as a model for use by other states and LEPCs in implementing the Title III program.

1990 Accomplishments

In 1990, the Agency obligated a total of $6,623,300 and 32.6 total workyears for this program, of which $1,890,300 was from the Salaries and Expenses appropriation and $4,733,000 was from the Abatement, Control and Compliance appropriation.

In 1990, EPA developed and implemented an emergency planning initiative

In 1992, the Agency will continue to foster a coordinated enforcement effort between EPA and the States as more formal, information-sharing capabilities and enforcement referral protocols are developed. The program will develop internal guidance on conducting investigations, develop targeting information to identify facilities that may have regulated chemicals present, and provide states with information on prospective violators identified through Agency databases.

CLEAN AIR ACT -- ACCIDENTAL RELEASE PROVISIONS

The Agency requests a total of $2,490,300 supported by 13.0 total workyears for 1992. Of the request, $1,490,300 will be for the Salaries and Expenses appropriation and $1,000,000 will be for the Abatement, Control and Compliance appropriation.

Resources will be used to begin the regulatory development process for meeting statutory deadlines of the Clean Air Act accident release provisions. In 1992, the program will focus on five objectives. First, the Agency will develop a list of hazardous chemicals (and associated thresholds) that upon accidental release risk seriously affecting the general public and the environment. Efforts will be made to determine which chemicals should be listed to meet criteria set forth in the legislation using existing lists and approaches. Once the criteria for formulating the list is prepared, methodologies for establishing a threshold quantity for each substance will be reviewed. In addition, a process will be developed for responding to petitions for additions and deletions to the list.

Second, the Agency will develop regulations addressing requirements for owners and operators of facilities to develop risk management plans, coordinating Agency activities with OSHA, developing guidance, and evaluating regulatory impacts. The program will also develop procedures for registration, audit and review of plans. Third, the Agency will provide support and establish liaison with the Chemical Safety and Hazard Investigation Board after it has been established. EPA will begin to formulate procedures and processes for assisting Board startup and coordinating and assisting the Board in investigating accidents.

Fourth, the Agency will conduct a hydrofluoric acid study and develop required regulations either for converting to an alternative, or for preventing accidental releases. Finally, the Agency will develop the expertise of States and local entities who will be required to receive and review information from regulated facilities. In addition, the program will administer a General Duty clause and will coordinate with the Office of Air and Radiation on state program implementation and grants.

1991 Program

In 1991, the Agency is allocating a total of $7,239,900 supported by 44.5 workyears, of which $2,801,900 is from the Salaries and Expenses appropriation and $4,438,000 is from the Abatement, Control and Compliance appropriation.

In 1991, the Agency is focusing efforts on the increasing needs of state and local governments as they incorporate Title III enforcement functions into their institutional structure. For its part, EPA is stepping up its

that provided assistance to states and local communities to strengthen the capabilities and operation of LEPCs. The program also introduced an automated information management system to help local communities manage Title III information and use computerized hazards analysis to address the extremely hazardous substances reported under the law. In addition, the Agency published an advisory for states and local governments on chlorine in swimming pools and presented regional training on hazards analysis.

In the regulatory area, EPA issued final regulations for implementing the Title III Indian program and established reporting threshold quantities for the community right-to-know sections of the law. The Agency also published an advanced notice of proposed rulemaking to establish criteria for adding chemicals to the extremely hazardous substance list.

In 1990, the enforcement program made significant strides. The first nationwide Emergency Planning and Community Right-to-Know enforcement planning meeting was held. A number of enforcement support documents were developed including model enforcement pleadings, a penalty policy, inspection targeting data, and an enforcement manual. The Regions issued 31 Administrative complaints with proposed penalties in excess of $2.7 million. The number of complaints issued in 1990 represents a 180% increase over 1989. The EPCRA/CERCLA S103 program also conducted a nationwide enforcement initiative in which each EPA Region participated.

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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## HAZARDOUS WASTE
### Hazardous Waste Enforcement

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Hazardous Waste Enforcement | | | | | |
| Salaries & Expenses | $21,285.4 | $27,659.8 | $27,659.5 | $31,464.8 | $3,805.3 |
| Abatement Control and Compliance | $20,027.8 | $31,426.7 | $31,426.7 | $32,634.7 | $1,208.0 |
| TOTAL | $41,313.2 | $59,086.5 | $59,086.2 | $64,099.5 | $5,013.3 |
| **TOTAL:** | | | | | |
| Salaries & Expenses | $21,285.4 | $27,659.8 | $27,659.5 | $31,464.8 | $3,805.3 |
| Abatement Control and Compliance | $20,027.8 | $31,426.7 | $31,426.7 | $32,634.7 | $1,208.0 |
| Hazardous Waste Enforcement TOTAL | $41,313.2 | $59,086.5 | $59,086.2 | $64,099.5 | $5,013.3 |
| **PERMANENT WORKYEARS** | | | | | |
| Hazardous Waste Enforcement | 428.3 | 549.8 | 549.8 | 594.0 | 44.2 |
| TOTAL PERMANENT WORKYEARS | 428.3 | 549.8 | 549.8 | 594.0 | 44.2 |
| **TOTAL WORKYEARS** | | | | | |
| Hazardous Waste Enforcement | 447.5 | 574.0 | 574.0 | 594.0 | 20.0 |
| TOTAL WORKYEARS | 447.5 | 574.0 | 574.0 | 594.0 | 20.0 |

## Hazardous Waste Enforcement

### Budget Request

The Agency requests a total of $64,099,500 supported by 594.0 total workyears for 1992 of which $31,464,800 will be for the Salaries and Expenses appropriation and $32,634,700 will be for the Abatement, Control, and Compliance appropriation. This represents an increase of $3,805,300 for the Salaries and Expenses appropriation, $1,208,000 for the Abatement, Control, and Compliance appropriation, and 20.0 total workyears over 1991 levels.

### HAZARDOUS WASTE ENFORCEMENT

### 1992 Program Request

The Agency requests a total of $64,099,500 supported by 594.0 total workyears of which $31,464,800 will be for the Salaries and Expenses appropriation and $32,634,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $3,805,300 for Salaries and Expenses, $1,208,000 for Abatement, Control and Compliance, and 20.0 total workyears over 1991 levels. The increase in dollars and total workyears will support the expanded workload associated with the increasing RCRA handler universe, and the Agency's Great Lakes and pollution prevention initiatives.

The Agency will increase its emphasis on addressing the facilities posing the greatest risks to the environment and human health by completing facility assessments and implementation of national corrective action criteria. The Agency will continue to implement the corrective action stabilization strategy. Long-term corrective measures will continue where already imposed, but the focus will be on stabilizing those facilities posing the most significant threat.

The Agency will emphasize inspecting new RCRA handlers resulting from new listings and rules. This will send a strong message to potential violators that the new regulations will be enforced vigorously. The new rules and listings include the organic toxicity characteristic and hazardous waste fuel rules, as well as the mixed waste, and wood preserving listings.

The Agency will implement an integrated RCRA enforcement pollution prevention program which will include conducting targeted inspections of generators and initiating searches of facilities operating illegally outside the RCRA system. Where possible, settlements of enforcement actions taken as a result of violations discovered during generator and non-notifier inspections, as well as other enforcement actions, will integrate pollution prevention conditions.

Resources will be dedicated to the development of remedial action plans for more than 30 critical sites in the Great Lakes Basin. The affected Regions will, in coordination with the Office of Water and the Office of Enforcement, conduct intensified inspections and initiate appropriate administrative and judicial

enforcement as necessary. Corrective action, either through enforcement or permits, will be imposed at the most environmentally-significant facilities.

The Resource Conservation and Recovery Act (RCRA) Inspector Training Institute will continue to provide training to ensure a consistent inspection program. Training in 1992 will be conducted on the air emissions rule and incinerator regulations.

1991 Program

In 1991, the Agency is allocating a total of $59,086,200 supported by 574.0 total workyears, of which $27,659,500 is from the Salaries and Expenses appropriation and $31,426,700 is from the Abatement, Control and Compliance appropriation.

Consistent with the RCRA Implementation Study (RIS), the Agency is developing a facility stabilization strategy that will control or abate imminent threats to human health and the environment from releases at RCRA facilities while long-term remedies are pursued. The Agency will continue to address environmentally significant facilities through oversight of owner/operator response actions. Emphasis will continue to be placed on conducting facility assessments to ensure that corrective action activities are focused on those facilities that offer the greatest risk reduction potential. The Agency is developing national criteria for prioritization to ensure that the most environmentally significant facilities are addressed first.

The Agency is placing increased emphasis on implementation of the land disposal restrictions by increasing the number of inspections and oversight activity of small quantity generators. The Agency is developing inspection and enforcement guidance policies for newly regulated waste such as those covered under the organic toxicity characteristics rule and the hazardous waste fuel rule, as well as mixed waste, and the wood preserving listings. Increased emphasis is being placed on inspecting hazardous waste exporters.

The RCRA Inspector Training Institute is continuing to provide training to ensure a consistent inspection program. The Agency is continuing to institutionalize enforcement and inspection training and workshops through the use of interactive computer training and satellite-based training classes. The inspectors' role in pollution prevention is being studied to determine if this function should be expanded to provide technical assistance to the regulated community.

1990 Accomplishments

In 1990, the Agency obligated a total of $41,313,200 supported by 447.5 total workyears, of which $21,285,400 was from the Salaries and Expenses appropriations, and $20,027,800 was from the Abatement, Control and Compliance appropriation.

The Agency developed inspection guidance and enforcement strategies for the implementation of multi-media approaches to disposal of hazardous waste. Guidance on the enforcement of new regulations relating to land disposal restrictions, as well as guidance for the detection of illegal disposal and special wastes were revised.

The Agency focused its corrective action resources to ensure that owners/operators conducted facility investigations in compliance with the terms of permits or orders. The Agency also monitored the development of corrective measures plans to assure that environmentally sound measures are proposed and implemented. EPA placed priority on new facility investigations at environmentally significant closing and closed facilities as well as at permitted facilities. Facility assessments were conducted (230 total) to ensure that the most environmentally significant facilities are addressed.

Compliance monitoring and enforcement actions were taken against handlers that presented the greatest threat to human health and the environment. The Agency ensured that state inspections were conducted biennially at all operating land disposal facilities and at closed land disposal and treatment and storage facilities, as required by Agency policy. The states and EPA conducted 12,698 inspections of commercial, Federal, state and local facilities that store, treat or dispose of hazardous waste. Inspections of commercial land disposal and treatment facilities were conducted twice a year to ensure compliance with the Superfund Off-Site Policy. Through technical enforcement support and state program evaluations, the Agency ensured that the states took timely and appropriate enforcement actions. In the case of unauthorized states, the Agency initiated enforcement action. Together, the states and EPA issued a total of 1,500 administrative orders.

# 6. PESTICIDES

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## PESTICIDES

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **APPROPRIATION** | | | | | |
| Salaries & Expenses | $45,170.4 | $54,340.7 | $54,313.2 | $54,575.3 | $262.1 |
| Abatement Control and Compliance | $44,939.7 | $47,050.2 | $47,050.2 | $54,125.2 | $7,075.0 |
| Research & Development | $6,490.3 | $6,203.4 | $6,203.4 | $8,363.3 | $2,159.9 |
| TOTAL, Pesticides | $96,600.4 | $107,594.3 | $107,566.8 | $117,063.8 | $9,497.0 |
| Reregistration and Expedited Processing | $22,926.8 | $18,022.7 | $18,022.7 | | -$18,022.7 |
| PERMANENT WORKYEARS | 937.7 | 1,078.7 | 1,078.7 | 1,198.2 | 119.5 |
| TOTAL WORKYEARS | 975.4 | 1,087.7 | 1,087.7 | 1,198.2 | 110.5 |
| OUTLAYS | $81,413.9 | $98,930.0 | $98,904.3 | $107,800.8 | $8,896.5 |
| AUTHORIZATION LEVELS | Authorization for the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Amendments of 1988 reauthorized this program at a level of $95,000 for 1990 and $95,000 for 1991. Authorization for FIFRA expires on September 30, 1991. | | | | |

# PESTICIDES

## OVERVIEW AND STRATEGY

Pesticides can be both beneficial and hazardous substances. Almost everyone uses or is exposed to use of pesticide products. Pesticides are also major contributors to ground water pollution and agricultural runoff to surface water. At the same time, pesticide products provide benefits to society, contributing to agricultural productivity and controlling human diseases.

EPA's authority to regulate pesticides is set forth in two statutes. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) governs the licensing or registration of pesticide products. Sections 408 and 409 of the Federal Food, Drug and Cosmetic Act (FFDCA) regulate the level of pesticide residues in raw and processed agricultural commodities.

FIFRA. Under FIFRA, all pesticides must be registered with EPA before they may be sold or distributed in the United States. EPA operates under an overall risk/benefit standard for pesticide registration. Pesticides must perform their intended function when used according to label directions, without posing unreasonable risks of adverse effects on human health or the environment. In making pesticide registration decisions, EPA is required to take into account the economic, social, and environmental costs and benefits of pesticide use. This is a task of enormous scope and complexity. OPP regulates over 1,000 active ingredients, included in approximately 25,000 registered products, which account for about three billion pounds of pesticide active ingredients used each year.

Amendments to FIFRA in 1988 substantially strengthened EPA's pesticide regulatory authority, principally in the following areas:

- The 1988 amendments accelerate the reregistration process for scientific review and assessment of previously registered pesticides by requiring completion of this task within nine years - by 1997.

- EPA is required to give accelerated review to applications for initial or amended registration of products which are similar to pesticides already registered with EPA.

- The 1988 law also authorizes the collection of fees which provide both staff and contract resources to support reregistration activities.

- EPA's responsibilities and funding requirements were also substantially changed for the storage and disposal of pesticides whose registrations have been suspended and cancelled. The law also places limitations on the availability of funding to indemnify certain owners of suspended and cancelled pesticides.

FFDCA. Under the FFDCA, EPA sets tolerances, or maximum legal limits, for pesticide residues on food commodities marketed in the U.S. Before a pesticide can be registered under FIFRA for use on a food or feed crop, EPA must either establish a tolerance or, if appropriate, grant an exemption from the tolerance requirement.

The Agency's 1992 bu equest for the pesticide program includes the following elements: 1) R tion, Special egistration and Tolerances, including registration of p ducts and contr of pesticide residues in the food chain, 2) Generic Chem Review, including review and reregistration of existing products, 3) Pesticide Program Implementation, including encouragement of correct uses of pesticides, 4) Pesticides Enforcement, including the enforcement of pesticide regulations, 5) Research and Development to support and improve EPA's ability to evaluate the risks and benefits of pesticides, and 6) consulting services to support the Scientific Advisory anel (SAP).

1992 marks the first year of the implementation of the Pesticide Program's Four Year Strategy. The overall strategy for FY 1992 emphasizes: (1) providing resources to carry out the pesticide reregistra ion program under FIFRA '88; (2) building effective Regi nal and state capacity to tailor risk reduction and pollution prevention pro rams to local needs for ground water, worker protection, and endangered species; (3) minimizing risk by promoting the use of safer chemicals and responding to public concerns about the safety of the Nation's food supply; (4) expanding international leadership to provide reater coordination on pesticide issues to facil cate interna ional trade in a cultural products; and (5) enhancing enforceme t to meet increased requirements in the areas of ground water protection, reregistration, and laboratory data integrity. The implementation of the strategy will focus attention on accomplishing the goals and objectives outlined above, including the implementation of environmental indicators to measure progress toward these goals.

## 1. Registration, Special Registration and Tolerances

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 scie ists, 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-wat r contamination, resid on food or feed, worker and applicator exposure, environmental risks, and ch ic and acute health hazards.

The registration program also includes special registration and tolerance-setting activities. The special registration program continues to perform an auxiliary function by permitting certain uses of unregistered pesticide for experimental purposes and emergency pest situations. It also provides oversight and gu ance to state registration and experimental use permit functions. The tolerance 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 commo ies and processed fo s.

The 1992 budget request emphasizes (1) promoting safer pesticides, including registering new chemicals and biologicals faster, (2) implementation of an antimicrobial strategy to ensure the efficacy of registered disinfectants, and (3) assessing risks of pesticide use on lawns and inside buildings.

2. 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 problem 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 1988 FIFRA amendments contain provisions for a greatly accelerated five-phase reregistration program, expedited processing of certain types of registration applications, a new system for collecting and administering fees, and significant revisions to the indemnification and disposal program for pesticides suspended and cancelled after enactment of the 1988 amendments. The fees mandated by these amendments are to be used to supplement appropriated funds to carry out reregistration and expedited processing.

The Generic Chemical Review program contributes to the safety of the food supply through the reregistration program and special reviews, in which pesticides suspected of causing unreasonable adverse effects undergo intensive risk/benefit analysis. This may result in changes to the terms and conditions of their use. The Generic Chemical Review program also includes the disposal program, for which funds are requested to continue safe storage of stocks of 2,4,5-T/Silvex in 1992. Funds are not requested at this time for 2,4,5-T/Silvex disposal, which will be initiated after a facility is permitted and EPA contracts with the permitted facility to dispose of the stocks.

There is a significant resource request increase in 1992 for elements of the Food Safety initiative within this program. This initiative includes the following:

- EPA will continue to give high priority to implementation of the 1988 FIFRA amendments. Additional FIFRA Fund workyears, and reprogrammed base resources, are requested to reregister older pesticides, as mandated by the 1988 FIFRA Amendments. The use of the additional workyears will be dependent on the availability of fee balances in the FIFRA revolving fund.

- Other food safety activities to be emphasized through increased resources and efforts include the development of environmental indicators, integrated pest management (IPM) pilot projects, review of inert ingredients used in pesticide products, special reviews deriving from risk questions raised by the reregistration program, and international coordination of pesticide issues.

3. Pesticides Program Implementation

In FY 1992 the Agency expects to see major field implementation activities related to protection of ground water, endangered species, and workers exposed to pesticides. Critical components of these programs are coming to closure in 1991 and will drive the Regional and state implementation needs in 1992. The scope of the risks in the field is substantial. About 150 pesticides are potential leachers, and 46 have been detected in ground water; there are 10.5

million private wells and 94,600 community wells from which approximately 130 million people drink. Approximately 2.3 million workers, on the approximately 850,000 farms in this country, are exposed to pesticides during application. Increased resources provided in 1990 and 1991 will enable the Regions and states to begin addressing these problems. In so doing, the Agency will move away from the traditional Headquarters command and control approach to a much more sophisticated approach in which risk management decisions are made closer to the source.

Under this program, EPA is continuing to promote the correct uses of pesticides. To achieve this goal, EPA has cooperative agreements with State Lead Agencies to certify applicators to use Restricted Use Pesticides. EPA provides grants to the states to support this activity. Certification grants help support 53 applicator certification programs in participating states and territories and Federally administered programs in Colorado and Nebraska.
EPA also has an interagency agreement with USDA to provide training to pesticide applicators by working through State Cooperative Extension Services (SCES). Regional offices also provide technical assistance to states on pesticide issues.

4. 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 1992.

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 1992, Regions will increase enforcement activities related to ground-water protection. Requirements of the accelerated reregistration program of the 1988 Amendments to FIFRA will result in increased enforcement activity. Headquarters will direct the OPTS laboratory data integrity program, which inspects private testing laboratories to determine compliance with Good Laboratory Practices (GLP) regulations, audits in process and scientific accuracy of completed test studies.

5. Research and Development

The 1992 request for pesticides research and development will continue to support the Office of Pesticides Programs (OPP) by performing research in the areas of test method development and validation; biomarkers, dosimetry and extrapolation; exposure monitoring; environmental engineering and technology; ecology (both fate and transport and risk assessment); and biotechnology. In addition, EPA's Office of Research and Development will continue to provide technical support to OPP in exposure assessment and monitoring procedures and risk assessment methodologies for oncogenicity, mutagenicity and reproductive and developmental toxicity. New research will be performed in the areas of reproductive and neurological toxicology and exposure assessment.

6. 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. By using these services, which are funded from the Salaries and Expenses appropriation, the Agency can ensure that its regulatory program continues to be based on sound science.

PESTICIDES

| PROGRAM ACTIVITIES | ACTUAL 1990 | CURRENT ESTIMATE 1991 | ESTIMATE 1992 | INCREASE (+) DECREASE (-) 1992 VS 1991 |
|---|---|---|---|---|
| Incremental Outputs | | | | |
| Special Review Decisions..... | 12 | 13 | 16 | + 3 |
| New Chemical and Biochemical/ Microbial Agent Reviews... | 360 | 330 | 330 | --- |
| Old Chemical Reviews..... | 4,119 | 3,850 | 3,443 | -407 |
| Amended Registration Reviews | 8,294 | 4,560 | 4,139 | -421 |
| New Use Reviews..... | 389 | 300 | 300 | --- |
| Emergency Exemption Reviews.. | 426 | 250 | 250 | |
| Experimental Use Permit Reviews..... | 288 | 400 | 400 | |
| 24(c) State Registration Reviews..... | 450 | 475 | 475 | |
| Temporary Tolerance Petition Reviews..... | 63 | 150 | 150 | |
| Tolerance Petition Reviews... | 371 | 475 | 475 | |
| Inert Ingredient Reviews..... | 8 | 15 | 15 | |
| Producer Establishment Inspections a/..... | 1,594 | 2,509 | 2,779 | |
| Use/Reentry and Experimental Use Obsevations a/..... | 12,843 | 18,829 | 19,369 | |

| | | | | |
|---|---|---|---|---|
| Marketplace Investigations a/. | 5,947 | 4,035 | 4,305 | +270 |
| Import Inspections a/..... | 433 | 475 | 4,975 | +4,500 |
| State Applicator License and Record Inspections..... | 7,130 | 8,200 | 8,450 | +250 |
| State Dealer Record Inspections..... | 3,981 | 4,450 | 4,600 | +150 |
| State Disposal, Storage, Transportation, and Recall Inspections..... | --- | --- | 5,000 | +5,000 |
| Federal Laboratory Inspections..... | 47 | 80 | 80 | --- |
| Test Study Audits..... | 219 | 437 | 412 | -25 |
| Reregistration Elibility Document..... | 0 | 15 | 30 | + 15 |

a/Includes both Federal and State enforcement activities

Research and
Development

F :RONMENTAL PROTECTION AGENCY

1992 Budget Estimate

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## PESTICIDES
### Pesticides Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Scientific Assessment - Pesticides | | | | | |
| Salaries & Expenses | $158.1 | $196.1 | $196.1 | $198.6 | $2.5 |
| TOTAL | $158.1 | $196.1 | $196.1 | $198.6 | $2.5 |
| Monitoring Systems & Quality Assurance Pesticides | | | | | |
| Salaries & Expenses | $337.8 | $270.0 | $270.0 | $278.6 | $8.6 |
| Research & Development | $676.1 | $678.4 | $678.4 | $1,678.4 | $1,000.0 |
| TOTAL | $1,013.9 | $948.4 | $948.4 | $1,957.0 | $1,008.6 |
| Health Effects - Pesticides | | | | | |
| Salaries & Expenses | $2,334.0 | $2,085.1 | $2,085.1 | $2,150.7 | $65.6 |
| Research & Development | $1,635.6 | $1,115.2 | $1,115.2 | $2,165.2 | $1,050.0 |
| TOTAL | $3,969.6 | $3,200.3 | $3,200.3 | $4,315.9 | $1,115.6 |
| Environmental Processes & Effects - Pesticides | | | | | |
| Salaries & Expenses | $3,247.7 | $3,779.1 | $3,751.6 | $3,855.7 | $104.1 |
| Research & Development | $3,425.6 | $4,271.8 | $4,271.8 | $4,371.8 | $100.0 |
| TOTAL | $6,673.3 | $8,050.9 | $8,023.4 | $8,227.5 | $204.1 |
| Environmental Engineering And Technology - Pesticides | | | | | |
| Salaries & Expenses | $154.8 | $73.2 | $73.2 | $128.0 | $54.8 |
| Research & Development | $753.0 | $138.0 | $138.0 | $147.9 | $9.9 |
| TOTAL | $907.8 | $211.2 | $211.2 | $275.9 | $64.7 |
| TOTAL: | | | | | |
| Salaries & Expenses | $6,232.4 | $6,403.5 | $6,376.0 | $6,611.6 | $235.6 |
| Research & Development | $6,490.3 | $6,203.4 | $6,203.4 | $8,363.3 | $2,159.9 |
| Pesticides Research TOTAL | $12,722.7 | $12,606.9 | $12,579.4 | $14,974.9 | $2,395.5 |
| **PERMANENT WORKYEARS** | | | | | |
| Scientific Assessment - Pesticides | 1.8 | 1.5 | 1.5 | 1.5 | 0.0 |
| Monitoring Systems & Quality Assurance Pesticides | 5.1 | 5.2 | 5.2 | 5.2 | 0.0 |

PESTICIDES
Pesticides Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| Health Effects - Pesticides | 35.4 | 39.5 | 39.5 | 39.5 | 0.0 |
| Environmental Processes & Effects - Pesticides | 56.4 | 62.7 | 62.7 | 62.7 | 0.0 |
| Environmental Engineering And Technology - Pesticides | 2.5 | 1.1 | 1.1 | 2.1 | 1.0 |
| TOTAL PERMANENT WORKYEARS | 101.2 | 110.0 | 110.0 | 111.0 | 1.0 |
| TOTAL WORKYEARS | | | | | |
| Scientific Assessment - Pesticides | 1.8 | 1.5 | 1.5 | 1.5 | 0.0 |
| Monitoring Systems & Quality Assurance Pesticides | 5.1 | 5.2 | 5.2 | 5.2 | 0.0 |
| Health Effects - Pesticides | 38.4 | 39.5 | 39.5 | 39.5 | 0.0 |
| Environmental Processes & Effects - Pesticides | 60.3 | 62.7 | 62.7 | 62.7 | 0.0 |
| Environmental Engineering And Technology - Pesticides | 2.5 | 1.1 | 1.1 | 2.1 | 1.0 |
| TOTAL WORKYEARS | 108.1 | 110.0 | 110.0 | 111.0 | 1.0 |

PESTICIDES

P[illegible]icides Research

Principal Outputs

1992:

- o Preliminary groundwater strategy for monitoring agricultural chemicals (Monitoring).
- o Annual report on the Pest[illegible]des Repository (Monitoring).
- o Report on Privatization Program for QA reference materials (Monitoring).
- o Guidance for interpretation of prenatally induced supernumerary ribs as indicators of developmental effects (Health).
- o Report on dermal absorption of pesticides: Effects of age, dose, and analytical methods (Health).
- o Report on assessment of Pacific Coast fishes and pollution monitoring (Environmental Processes).
- o Report on validation of hazard assessment predictions of environmental effects of pesticides in estuarine systems (Environmental Processes).
- o Report on effects, persistence and distribution of Guthion in littoral enclosures (Environmental Processes).
- o Predicting the survival and effects of introduced microorganisms: An evaluation of two freshwater microcosm systems (Environmental Processes).
- o Report to evaluate survival and re-entrainment of bacterial colonizing leaf surfaces (Environmental Processes).
- o Report on the relationship between microcosm and field studies (Environmental Processes).
- o Report on the composting of pesticide residues (Engineering).

  Report on low-cost/low-technology physical/chemical destruction methods for pesticides (Engineering).

199[illegible]:

- o Report on biomarkers and dosimetry research activity for exposure monitoring (Monitoring).
- o Pesticides exposure to urban and suburban pesticides in children (Monitoring).

- Application of immunoaffinity to personal dosimetry studies (Monitoring).

- Report on exposure of field applications of biological agents used as agricultural pesticides (Monitoring).

- Annual report on the Pesticides Repository (Monitoring).

- Report on Privatization Program for QA reference materials (Monitoring).

- Develop in vitro neurotoxicology test methods for the identification and characterization of neurotoxic pollutants (Health).

- Development of neurobehavioral testing strategy for use in Pesticide Guidelines (Health).

- Report on teratogenic responses in Menidia berryllina embryos for environmental assessment: Estuarine, freshwater and hazardous waste sites (Environmental Processes).

- Role of estuarine sediments in the biodegradation of anthropogenic chemicals (Environmental Processes).

- Validation of pesticide effects on fish growth under field exposure conditions (Environmental Processes).

- Fish reproductive success studies for littoral enclosures (Environmental Processes).

- Overview of methods for evaluating the effects of chemicals in reproduction in birds (Environmental Processes).

- Control of bacteria at field release sites (Environmental Processes).

- Users manual for updated TEEAM model (Environmental Processes).

- Avian muscarinic receptor binding assays as biomarkers of pesticide exposure (Environmental Processes).

- Guidance manual for selecting protective clothing for agricultural pesticide operations (Engineering).

- Conduct of a workshop: International Workshop on Research in Pesticide Treatment, Disposal and Waste Minimization (Engineering).

- Report on open burning of pesticide bags (Engineering).

- Release of Version 2.0 of the Pesticide Treatability Data-Base Software Package (Engineering).

1990: o Protein adduct forming chemicals for exposure monitoring (Monitoring).

o Annual report on the Pesticides Repository (Monitoring).

o Report on the immunotoxicology methods development and validation in rats (Health).

o Report on the rodent model of organophosphorus-induced delayed neuropathy (Health).

o Characterization of mammalian toxicity of a registered bacterial pesticide (Health).

o Report on sorption of water soluble ionic pesticides to soils and sediments (Environmental Processes).

o Effects of organophosphates on nesting success and nest abandonment in the field (Environmental Processes).

o Synthesis report on test methods for BCAs on avians (Environmental Processes).

o Report: Protocols for exposing freshwater fish and invertebrates to a fungal pest control agent (Environmental Processes).

o Calibration of greenhouse and the field for survival of genetically engineered microorganisms (Environmental Processes).

o Users manual for integrated exposure and ecological risk assessment in aquatic ecosystems (Environmental Processes).

o Final report on resistance and resilience of pond ecosystems to toxicant stress (Environmental Processes).

o A review of peer-reviewed literature/data for the treatability of pesticides from water, wastewater, and soils (Engineering).

o Production and release of the training video "Shedding Some Light on Pesticide Protection," which show the dermal exposure possible when appropriate protective clothing is not used properly during outdoor handling/use operations (Engineering).

o OPP-availability of the Pesticide Treatability Data-Base software package, Version 1.1 (Engineering).

# PESTICIDES

## Pesticides Research

### Budget Request

The Agency requests a total of $14,974,900 supported by 111.0 total workyears for 1992, an increase of $2,395,500 and 1.0 total workyears from 1991. Of the request, $6,611,600 will be for the Salaries and Expenses appropriation and $8,363,300 will be for the Research and Development appropriation, an increase of $2,159,900 in the Research and Development appropriation, and $235,600 in the Salaries and Expenses appropriation.

### Program Objectives

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Federal Food, Drug and Cosmetics Act (FFDCA) 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. Research includes:

- Developing and validating environmental and health test methods, including methods for extrapolating from high to low doses between mammalian species.
- Evaluating biological markers and testing them to determine their potential use in exposure monitoring studies.
- Performing ecological research including transport, fate and field validation to allow comparison between laboratory studies and actual field results.
- Studying the movement of pesticides through the environment in order to determine the eventual disposition of pesticides in the environment.
- Conducting engineering research on worker-safety and disposal of pesticides.
- Developing equipment and specialized monitoring protocols and procedures for total human exposure monitoring for pesticide exposure to characterize sources and routes of exposure.
- Evaluating the effects of microbial and biochemical pest control agents (MBPCAs) and products of biotechnology on humans and the environment.
- Determining the risk posed to ecosystems by environmental pollutants.

- Providing support to risk and exposure assessments by providing quality assurance materials and reference compounds for pesticide residue analyses.

SCIENTIFIC ASSESSMENT

1992 Program Request

The Agency requests a total of $198,600 supported by 1.5 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This is a $2,500 increase in the Salaries and Expenses appropriation. There is no change in total workyears. ORD will prepare and review health risk assessments for carcinogenicity, 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.

1991 Program

In 1991, the Agency is allocating a total of $196,100 supported by 1.5 total workyears for this program, all of which is from the Salaries and Expenses appropriation. The program will prepare and review health risk assessments and provide support for laboratory data audits.

1990 Accomplishments

In 1990, the Agency obligated a total of $158,100 supported by 1.8 total workyears for this program, all of which were from the Salaries and Expenses appropriation. Major activities included: support for laboratory data audits; consultation and review of ethylene bis dithro carbamate/ethylene thiourea (EBDC/ETU) assessments; data reviews on chemicals including bromoxynil, propagate, larvadex, metesystox, triphenyltin hydraxide (TPTH); uniconazole, and carbaryl; and teaching a developmental toxicity risk assessment course to program office professional staff.

MONITORING SYSTEMS AND QUALITY ASSURANCE

1992 Program Request

The Agency requests a total of $1,957,000 supported by 5.2 total workyears for this program, of which $278,600 will be for the Salaries and Expenses appropriation and $1,678,400 will be for the Research and Development appropriation. This represents an increase of $1,000,000 in the Research and Development appropriation and a $8,600 increase in the Salaries and Expenses appropriation. There is no change in total workyears. The increase in the Research and Development appropriation is due to increased research in the area of human exposure, particularly in developing methodologies for improving the assessment of residential exposures, including those of infants and toddlers.

ORD will develop monitoring methods and strategies to determine the effect of agricultural pesticides on surface and ground water systems. We will evaluate biological markers use and conduct studies to estimate capability of these

techniques to serve as indicators of exposure. Immunoassay procedures will be developed for the rapid detection of chemicals in monitoring and exposure assessment studies.

ORD will perform research to determine human exposure associated with household use of pesticides. Research will focus on home, lawn and household pesticide usage, particularly for infants and toddlers. Quality assurance in sample collection and analysis procedures will be provided including oversight of the Pesticides Repository.

1991 Program

In 1991, the Agency is allocating a total of $948,400 supported by 5.2 total workyears for this program, of which $270,000 is from the Salaries and Expenses appropriation and $678,400 is from the Research and Development appropriation. ORD is identifying and test biological markers of exposure for priority pesticide chemicals and provide protocols and methodologies for total human exposure monitoring for pesticides. Dermal exposure in children will be emphasized.

1990 Accomplishments

In 1990, the Agency obligated a total of $1,013,900 supported by 5.1 total workyears for this program, of which $337,800 was from the Salaries and Expenses appropriation and $676,100 was from the Research and Development appropriation. ORD developed cooperative Research and Development Agreement for privatizing the Pesticide Repository under the Federal Technology Transfer Act (FTTA) of 1986, and prepared and coordinated plans for implementing privatization.

HEALTH EFFECTS

1992 Program Request

The Agency requests a total of $4,315,900 supported by 39.5 total workyears for this program, of which $2,150,700 will be for the Salaries and Expenses appropriation and $2,165,200 will be for the Research and Development appropriation. This represents an increase of $1,050,000 in the Research and Development appropriation, and an increase of $65,600 for the Salaries and Expenses appropriation. There is no change in total workyears. The increase in the Research and Development appropriation will fund research in neurotoxicology and reproductive toxicology.

ORD will develop and refine bioassays to detect adverse developmental, reproductive, mutagenic, carcinogenic, neurotoxic and immunotoxic effects. ORD will conduct new research in neurotoxicity to determine age-related immune system sensitivity to pesticides. We will develop models to assess health risk assessment predictability and focus on methods 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 pesticide dermal absorption, metabolic differences between species and investigating the relationship between maternal health and fetal susceptibility to teratogenic outcome. These models will assist in the evaluation of pesticides data submitted as part of the registration and reregistration process.

To support microbial pesticide registration, ORD will develop testing protocols for detecting, identifying, and monitoring microbial agents in mammalian cells. Researchers will evaluate FIFRA Subdivision M infectivity guidelines for microbial agents, and detecting health effects from exposure to genetically engineered pesticides.

1991 Program

In 1991, the Agency is allocating a total of $3,200,300 supported by 39.5 total workyears for this program, of which $2,085,100 is from the Salaries and Expenses appropriation and $1,115,200 is from the Research and Development appropriation. ORD is providing data on the effects of microbial and biochemical pest control agents and genetically engineered pesticides and methods to detect adverse alterations in the reproductive processes in animals.

1990 Accomplishments

In 1990, the Agency obligated a total of $3,969,600 supported by 38.4 total workyears for this program, of which $2,334,000 was from the Salaries and Expenses appropriation and $1,635,600 was from the Research and Development appropriation. ORD included development of neurobehavioral toxicity data of formamidine pesticides and standardization of microbial pesticide testing protocols.

ENVIRONMENTAL PROCESSES AND EFFECTS

1992 Program Request

The Agency requests a total of $8,227,500 supported by 62.7 total workyears for this program, of which $3,855,700 will be for the Salaries and Expenses appropriation and $4,371,800 will be for the Research and Development appropriation. This represents an increase of $100,000 in the Research and Development appropriation, and an increase of $104,100 in the Salaries and Expenses appropriation. There is no change in total workyears. The increase in the Research and Development appropriation will support expanded research into ecological risk assessments.

ORD will develop and revise test methods according to the margin of error attributed to environmental influences. Methods will be devised to investigate chemical, toxicological and teratogenic properties to provide standardized testing or monitoring protocols.

In the ecological area, ORD will develop and validate standardized testing and monitoring protocols to predict pesticide transport, degradation, exposure, and fate in marine, freshwater and terrestrial organisms. Studies include life cycle tests and physiological measurements to predict toxicity and to determine factors controlling chronic and acute testing results. Laboratory and field results will be compared to evaluate extrapolation potentials.

Researchers will develop and improve bioassays to determine effects of microbial pest control agents on non-target organisms. Parameters such as routes of exposure, detection methods, identification schemes, virulence, toxicity, and infectivity will be evaluated through bioassays. To fully characterize potential

environmental consequences of altered microbial pest control agents (MPCAs) and genetically altered biological control agents (BCAs), research will be conducted to better understand the movement, survival and mode of action on receptor organisms. Research results will support modifications of testing protocols for Subpart M guidelines used by industry to provide registration data.

Mathematical models, support databases, and protocols for assessing ecosystem exposure and hazards will be arranged in a database structure to accelerate completion of ecological risk assessments. ORD will adapt pesticide release, transport, and transformation parameters to dependent ecological models. Standardized descriptors for use in risk assessment will be developed for biotic effects of pesticides on populations, communities, and ecosystems. Field validation studies will be conducted to evaluate the strengths and weakness of the quotient method now used in pesticide regulatory actions.

1991 Program

In 1991, the Agency is allocating a total of $8,023,400 supported by 62.7 total workyears for this program, of which $3,751,600 is from the Salaries and Expenses appropriation and $4,271,800 is from the Research and Development appropriation.

ORD is developing test methods in support of FIFRA guidelines, performing research on transport, fate and field validation, and the effects of biological pest control agents and develop risk assessment techniques. Studies are being designed to attain a better understanding of the elements at risk and the processes which influence unacceptable degradation of the environment.

Congressional Directives. A total of $200,000 is for the Congressionally directed project for studying Formosan subterranean termites at Louisiana State University.

1990 Accomplishments

In 1990, the Agency obligated a total of $6,673,300 supported by 60.3 total workyears for this program, of which $3,247,700 was from the Salaries and Expenses appropriation and $3,425,600 was from the Research and Development appropriation. Fourteen major reports were provided for Agency guidance covering pesticide subjects across several media, diverse biota and at various environmental levels of organization.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1992 Program Request

The Agency requests a total of $275,900 supported by 2.1 total workyears for this program, of which $128,000 will be in the Salaries and Expenses appropriation and $147,900 will be in the Research and Development appropriation. This represents increases of $9,900 in the Research and Development appropriation and $54,800 in the Salaries and Expenses appropriation. There is a 1.0 increase in total workyears. These increases support pesticide disposal and treatment research.

ORD will assist state and other Federal agencies in evaluating proposed pesticide disposal and treatment methods. To support FIFRA-mandated container recycling programs, field-test methods for demonstrating adequate clean-up will be developed. A database to support pesticide treatment is being updated.

1991 Program

In 1991, the Agency is allocating a total of $211,200 supported by 1.1 total workyears for this program, of which $73,200 is from the Salaries and Expenses appropriation and $138,000 is from the Research and Development appropriation. ORD is updating the pesticide treatability data, and finalizing thermal-destruction issues and compliance field-tests. A research symposium will be held to gather information which will be distributed regionally via technology transfer. Work on investigating low-cost/low technology biological destruction methods (i.e., composting) have begun.

1990 Accomplishments

In 1990, the Agency obligated a total of $907,800 supported by 2.5 total workyears for this program, of which $154,800 was from the Salaries and Expenses appropriation and $753,000 was from the Research and Development appropriation. A pesticide treatability database was developed which demonstrates where sufficient data exists for treatment/disposal of classes of pesticides and where significant data gaps exist. This database is providing the focus for the research needs for 1992. In addition, the thermal destruction (i.e., open burning) of pesticide bags was initiated.

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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PESTICIDES
Registration, Special Registration & Tolerances

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Registration, Special Registration, and Tolerances | | | | | |
| Salaries & Expenses | $13,477.8 | $14,833.0 | $14,833.0 | $15,120.2 | $287.2 |
| Abatement Control and Compliance | $2,859.6 | $3,016.7 | $3,016.7 | $4,166.7 | $1,150.0 |
| TOTAL | $16,337.4 | $17,849.7 | $17,849.7 | $19,286.9 | $1,437.2 |
| **TOTAL:** | | | | | |
| Salaries & Expenses | $13,477.8 | $14,833.0 | $14,833.0 | $15,120.2 | $287.2 |
| Abatement Control and Compliance | $2,859.6 | $3,016.7 | $3,016.7 | $4,166.7 | $1,150.0 |
| Registration, Special Registration & Tolerances TOTAL | $16,337.4 | $17,849.7 | $17,849.7 | $19,286.9 | $1,437.2 |
| **PERMANENT WORKYEARS** | | | | | |
| Registration, Special Registration, and Tolerances | 256.0 | 265.9 | 265.9 | 254.9 | -11.0 |
| TOTAL PERMANENT WORKYEARS | 256.0 | 265.9 | 265.9 | 254.9 | -11.0 |
| **TOTAL WORKYEARS** | | | | | |
| Registration, Special Registration, and Tolerances | 266.2 | 265.9 | 265.9 | 254.9 | -11.0 |
| TOTAL WORKYEARS | 266.2 | 265.9 | 265.9 | 254.9 | -11.0 |

## Registration, Special Registration, and Tolerances

### Budget Request

The Agency requests a total of $19,286,900 supported by 254.9 total workyears for 1992, an increase of $1,437,200 and a decrease of 11.0 workyears from 1991. Of the request, $15,120,200 will be for the Salaries and Expenses appropriation and $4,166,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $287,200 in the Salaries and Expenses appropriation and an increase of $1,150,000 in the Abatement, Control and Compliance appropriation.

### REGISTRATION, SPECIAL REGISTRATION, AND TOLERANCES

### 1992 Program Request

The Agency requests a total of $19,286,900 supported by 254.9 total workyears for this program, of which $15,120,200 will be for the Salaries and Expenses appropriation and $4,166,700 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $287,200 in the Salaries and Expenses appropriation, an increase of $1,150,000 in the Abatement, Control and Compliance appropriation, and a decrease of 11.0 in total workyears. The increase in Salaries and Expenses appropriation reflects increased personnel and support costs, offset by disinvestments in the Old Chemicals and Amendments program. The increase in the Abatement, Control and Compliance appropriation reflects increased emphasis on food safety. The decrease in workyears reflects an internal reprogramming to support the pesticides food safety initiative.

In 1992, the Agency expects to conduct 330 reviews of new chemicals and biochemical/microbial agents, 3,443 reviews of old chemicals, 4,139 amended registration reviews, 300 new use reviews, and 475 tolerance petition reviews. The emphasis on processing of new chemicals and new uses will be continued in 1992, to permit more rapid market entry of new, safer products.

The 1992 Budget Request places increased emphasis on food safety, including:

- Biological pesticides. Biological pesticides comprise the single fastest growing segment of new pesticide registration activity. With increased resources, the Agency will emphasize consideration of the regulatory implications of biological pesticides, and where appropriate, speed the experimental use and registration of these pesticides. These products include natural and genetically engineered microbial pesticides, biochemical pesticides and plants genetically engineered to produce pesticides. Resources are being reprogrammed to this area and supplemented with a requested increase.

- New and safer chemical pesticides. Many new chemicals for which registrations are being submitted are less toxic, less persistent, and more closely matched to the target species than previously registered

pesticides. Yet program efforts to register the chemicals have not received the resources available to older chemicals under the reregistration process. Resources for this area of work are being reprogrammed from other areas to expedite registration for promising new chemicals.

- Antimicrobials (Disinfectants). Increased resources will support further implementation of the antimicrobial strategy, including the initiation of work on a product problem reporting and investigation system. This area has recently been the subject of a General Accounting Office (GAO) audit, and has been identified as an area of emphasis in the agency's Federal Managers Financial Integrity Act (FMFIA) report.

- Lawn care and [illegible]or risk. Increased resources are requested to begin to develop a methodology for assessing human exposure to pesticides used on lawns and inside buildings, support data collection, and develop a regulatory program.

The reprogrammed resources for biological and new safer chemical pesticides come from Old Chemicals and Amendments. To the extent possible, the reprogramming of resources from Old Chemicals and Amendments will be applied to applications that do not qualify for fast track treatment under the 1988 FIFRA Amendments. Resources from Old Chemicals and Amendments are also being reprogrammed to the Generic Chemical Review program to support reregistration and Integrated Pest Management.

Regional liaison will continue to be improved by working closely with the Regional pesticide experts and other Regional staff to improve Regional and state understanding of national regulatory activities, and by obtaining their input on policies and reviews affecting their mission. This liaison will improve oversight of section 18 experimental use permit reviews and section 24(c) special local need programs.

To prevent circumvention of section 3 registration requirements, 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. Headquarters will continue to work closely with the Regions and states to monitor emergency exemptions and special local needs.

The Agency will continue 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 reregistration reviews. Tolerance fees will be increased to reflect any increase in the General Schedule pay-scale.

1991 Program

In 1991, the Agency is allocating a total of $17,849,700 supported by 265.9 total workyears for this program, of which $14,833,000 is from the Salaries and Expenses appropriation and $3,016,700 is from the Abatement, Control and Compliance appropriation.

In 1991, registration reviews are continuing to emphasize 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. Registration reviews continue to emphasize protection of ground water, workers, and endangered species.

In 1991, state participation in the Emergency Exemption, Experimental Use Permit, and Special Local Needs programs is continuing to be enhanced through EPA guidance and close Federal/state cooperation. Continued special attention is being given to biochemical/microbial agents. The Agency is revising the section 5 experimental use permit regulations to provide sufficient oversight of the early testing of genetically engineered and non-indigenous microbial pesticides.

Inerts of toxicological concern are listed on pesticide labels and will undergo data call-ins. Crop group tolerances continue to be used where applicable to reduce data requirements and efficiently deal with minor uses. Procedural and substantive rule for tolerances (sections 408 and 409 of FFDCA) are being prepared. Tolerance fees will be increased by the percentage of the General Schedule pay raise.

1990 Accomplishments

In 1990, the Agency obligated a total of $16,337,400 supported by 266.2 total workyears for this program, of which $13,477,800 was from the Salaries and Expenses appropriation and $2,859,600 was from the Abatement, Control and Compliance appropriation.

Special attention was given to biochemical and microbial pest control agents and necessary interagency coordination. Procedural and substantive rules for tolerances (sections 408 and 409 of FFDCA) were worked on. These rules will describe the process by which the Agency sets tolerances and specifies the kinds of data required. Cooperation with USDA and FDA was strengthened through regular meetings and consultations. Inerts of toxicological concern were listed on pesticide products labels and are undergoing data call-ins. Tolerance fees were increased by 3.6% to reflect the General Schedule pay raise for civilian employees.

## PESTICIDES
### Generic Chemical Review

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Generic Chemical Review | | | | | |
| Salaries & Expenses | $18,296.1 | $24,271.6 | $24,271.6 | $23,097.9 | -$1,173.7 |
| Abatement Control and Compliance | $16,318.5 | $11,543.0 | $11,543.0 | $17,468.0 | $5,925.0 |
| Reregistration and Expedited Processing | $21,116.5 | $16,063.0 | $16,063.0 | | -$16,063.0 |
| TOTAL | $55,731.1 | $51,877.6 | $51,877.6 | $40,565.9 | -$11,311.7 |
| **TOTAL:** | | | | | |
| Salaries & Expenses | $18,296.1 | $24,271.6 | $24,271.6 | $23,097.9 | -$1,173.7 |
| Abatement Control and Compliance | $16,318.5 | $11,543.0 | $11,543.0 | $17,468.0 | $5,925.0 |
| Reregistration and Expedited Processing | $21,116.5 | $16,063.0 | $16,063.0 | | -$16,063.0 |
| Generic Chemical Review TOTAL | $55,731.1 | $51,877.6 | $51,877.6 | $40,565.9 | -$11,311.7 |
| **PERMANENT WORKYEARS** | | | | | |
| Generic Chemical Review | 425.8 | 504.3 | 504.3 | 615.3 | 111.0 |
| TOTAL PERMANENT WORKYEARS | 425.8 | 504.3 | 504.3 | 615.3 | 111.0 |
| **TOTAL WORKYEARS** | | | | | |
| Generic Chemical Review | 436.8 | 504.3 | 504.3 | 615.3 | 111.0 |
| TOTAL WORKYEARS | 436.8 | 504.3 | 504.3 | 615.3 | 111.0 |

## Generic Chemical Review

### Budget Request

The Agency requests a total of $40,565,900, supported by 615.3 total workyears for 1992, an increase of $4,751,300 and 111.0 total workyears from 1991. Of the request, $23,097,900 will be for the Salaries and Expenses appropriation, and $17,468,000 will be for the Abatement, Control and Compliance appropriation. This represents a decrease of $1,173,700 in S&E and an increase of $5,925,000 in AC&C.

### GENERIC CHEMICAL REVIEW

### 1992 Program Request

The Agency requests a total of $40,565,900, supported by 615.3 total workyears for this program, of which $23,097,900 will be for the Salaries and Expenses appropriation, and $17,468,000 will be for the Abatement, Control and Compliance appropriation. Total workyears will include 345.3 from the Salaries and Expenses appropriation and 270.0 to be supported by the FIFRA Reregistration and Expedited Processing Revolving Fund. This represents a decrease of $1,173,700 in the Salaries and Expenses appropriation, an increase of $5,925,000 in the Abatement, Control, and Compliance appropriation, and an increase of 111.0 total workyears. The increase in workyears includes an additional 80.0 workyears that will be supported by the FIFRA Fund. The increase in Salaries and expenses reflects an increase in resources supporting the food safety initiative, including the FIFRA reregistration process, and increased personnel and support costs. The increase in Abatement, Control, and Compliance also supports the food safety initiative. The decrease in S&E is due to the shift of a one-time Congressional add-on that was provided in FY 1991 to support the hiring of scientific personnel in support of the FIFRA '88 pesticide reregistration program. This decrease is partially offset by an increase that supports the Food Safety Initiative and increased personnel and support costs.

The Agency is emphasizing food safety in the 1992 budget request for Generic Chemical Review. The reregistration process is an important component of the food safety initiative. The Agency has reprogrammed 20.0 total workyears in Salaries and Expenses, and is also requesting an increase of 80.0 total workyears from the FIFRA Fund to support this effort. The increased workyears will help the Agency to meet the pesticide reregistration goals, prescribed by the 1988 FIFRA Amendments. Further, the Agency will carry out its Phase IV responsibilities (independent identification of data gaps and issuance of requirements for registrants to fill gaps not previously identified), and its Phase V responsibilities (making determinations of reregistration eligibility). In 1992, the Agency projects completion of reregistration eligibility documents (REDs) for 30 pesticide cases. However, outputs will be affected by the total Fund workyears that can be supported from the FIFRA Revolving Fund. A total of 40 of the increased FIFRA Fund workyears in 1992 are dependent on Congressional action on the Administration's proposal to eliminate the annual per registrant maintenance fee caps, which would enable the Agency to collect an additional

$3,000,000 annually and achieve the statutory goal of $14,000,000 annually from maintenance fees.

Other components of the food safety initiative for 1992 include:

- International Programs. With increased resources, the Agency will expand international coordination in 1992, and will ensure consistency of decisions and science data with CODEX, the General Agreement on Tariff and Trade (GATT), and import/export policies. This initiative includes coordination with the European Community on its reregistration efforts, and expanded technical assistance through the Food and Agriculture Organization (FAO) and the Peace Corps.

- Inert Ingredients. With increased resources, the Agency is proposing to evaluate List 3 inerts (approximately 2,000 inerts of unknown toxicity) in accordance with OPTS's Inerts Strategy.

- Special Reviews. As data gathered through the reregistration process is reviewed, the Agency expects that data for some pesticides will meet the triggers for special reviews. The Agency is seeking additional resources for this purpose. 16 special review outputs are projected for 1992.

- Environmental Indicators. 1992 will be the first implementation year for the program's Four Year Strategy. Program activities will be focused on accomplishing the goals and objectives outlined in the strategy, and will include the implementation of environmental indicators to measure progress toward these goals. Additional resources will be used to develop and implement these indicators.

- Integrated Pest Management (IPM). The Agency is reprogramming resources to establish pilot projects, and work with USDA's IPM and Low Input Sustainable Agriculture (LISA) programs.

Reprogrammings to the Food Safety Initiative have come from other OPTS offices, as well as from within the Old Chemical ("Me Too") Registration Reviews and Amended Chemical Registration Reviews in OPP. To the extent possible, the reprogramming of resources from Old Chemicals and Amendments will be applied to applications that do not qualify for fast track treatment under the 1988 FIFRA Amendments.

In addition to the food safety increases, additional resources are being requested in 1992 for the Abatement, Control and Compliance appropriation. $4,000,000 is critically needed for storage of 2,4,5-T/Silvex stocks. The Agency's responsibility to bear the costs of storage and disposal of cancelled and suspended pesticides will continue in 1992 for chemicals which were suspended and cancelled prior to the 1988 FIFRA Amendments. These funds are needed to ensure the continued safe storage of national 2,4,5-T/Silvex stocks. These are known costs for which funds are not available from other sources. No funds are requested at this time for disposal of these stocks. However, once a facility is permitted to dispose of these pesticides, the Agency must award a disposal contract and begin incineration.

In addition, the five pollution prevention projects begun in 1991 under the Generic Chemical Review program as part of the Agency-wide program will continue into 1992.

1991 Program

In 1991, the Agency is allocating a total of $35,814,600 supported by 504.3 total workyears for this program, of which $24,271,600 is from the Salaries and Expenses appropriation and $11,543,000 is from the Abatement, Control and Compliance appropriation. Total workyears include 314.3 from the Salaries and Expenses appropriation and 190.0 supported by the FIFRA Fund.

The Agency expects that 15 Registration Eligibility Documents (RED) will be completed as work pertaining to the 1988 FIFRA Amendments continues. Funds from both base appropriations and the FIFRA Fund will be utilized to accomplish these tasks. Reregistration fees should all be received by the end of 1991, and EPA will be completing its Phase IV review for List B chemicals, and begin making reregistration decisions on some of the List B documents. Thirteen Special Reviews are projected for 1991. Special Reviews are a major risk reduction vehicle, and continue to be generated primarily from data reviewed during the reregistration process.

Previously appropriated pesticide disposal funds are being utilized for disposal of national dinoseb stocks and storage of 2,4,5-T/Silvex, pending the permitting of an incinerator for 2,4,5-T/Silvex disposal and the award of disposal contracts.

To prepare for the implementation of the Four Year Strategy, projects begun in 1990 to evaluate new directions for environmental indicators will carry forward into 1991. Additional projects to assess the feasibility of potential environmental indicators are planned for 1991.

As part of an Agency-wide program, the pesticide program has undertaken five pollution prevention projects in 1991. The purposes of these projects will be to: (1) reduce surface and ground-water contamination and human health risks due to application of herbicides in major corn-producing states; (2) work with ORD to develop a pesticides inerts strategy which formally addresses air pollution problems associated with volatile organic compounds; (3) work with ORD and Region 3 to develop and test the reliability of a pesticide hazard index to reduce the risk of pesticides in the Chesapeake Bay watershed; (4) work with the Agency's Office of Research and Development (ORD), the Regions, and states to develop a decision support system that will help states and local governments protect ground water from pesticides; and (5) support ORD in developing information that would lead to a reduction in pesticide applications through bioregulation (the management of biological degradation processes).

The Regional-state capabilities initiative, begun in 1990 to deal with the problems of ground-water protection, protecting endangered species from pesticides, and promoting the safety of pesticide applicators and farm workers, continues through 1991. This initiative strengthens EPA's field presence to provide state and local solutions to area-specific problems.

Worker Protection Standards for Agricultural Pesticides (40 CFR 170), governing pesticide-treated field reentry intervals, protective clothing, and label warnings, are scheduled to be published as a final regulation in 1991.

Implementation of the initial elements of the Indian strategy will occur in 1991. The objective of the strategy is to enable tribes to become involved

in all areas of the pesticide program through a combination of needs assessments, tribal training to enhance pesticides awareness, technical assistance, and a scholarship program.

The National Pesticide Survey (NPS) was completed in 1990 and the final report is scheduled for March 1991. Results of the NPS will be used to refine the Agency's Agricultural Chemicals in Ground Water Strategy and to evaluate further regulatory and state-specific approaches to protect drinking water from pesticide pollution. Detailed follow-up studies of the National Pesticide Survey (NPS) data base will be initiated, following issuance of the final report. Other funds will support special ground-water projects.

Congressional Directives

In 1991, Congress directed a total of $4,500,000 in Salaries and Expenses to be allocated in support of hiring of scientific personnel for the reregistration program. These resources are being used to support workyears that were originally planned to be funded by the FIFRA Revolving Fund. $125,000 in Abatement, Control and Compliance is for a Congressionally directed project to develop an herbicide identification and warning pilot program in conjunction with Michigan State University.

1990 Accomplishments

In 1990, the Agency obligated a total of $34,614,600 supported by 436.8 total workyears for this program, of which $18,296,100 was from the Salaries and Expenses appropriation and $16,318,500 was from the Abatement, Control and Compliance appropriation. Total workyears included 313.9 from the Salaries and Expenses Appropriation and 122.9 from the Reregistration and Expedited Processing Revolving Fund.

The FIFRA Amendments of 1988 accelerate the reregistration process for previously registered pesticides and require EPA to give accelerated consideration to applications for initial or amended registration of products which are similar to pesticides already registered with EPA. The 1988 FIFRA Amendments require a large increase in the number of registrant submissions. A major hiring and training program was initiated in 1989 and continued through 1990 in order to meet the increased workload posed by the amendments. The fourth list of active ingredients subject to reregistration was published early in 1990, and registrants began responding to all four lists. The Agency's major workload occurred in FIFRA Phase II-III activities, with the completion of Phase III for all four lists by October 1990. In addition, 12 Special Review decisions were reached in 1990.

The Agency launched a major new program in 1990 to build Regional and state capabilities to deal with problems of ground-water pollution, protect endangered species from pesticides, and promote the safety of pesticide applicators and agricultural workers. Local variations in agricultural conditions and practices emphasize the need for a strong field presence to provide state and local solutions to specific problems in these areas. Abatement Control and Compliance resources for the Headquarters national program development and liaison function for this initiative are contained in the Generic Chemical Review program. Resources for the Regions and states are in the Pesticide Program Implementation program. EPA continues its long-term collaborative effort with the states and

Federal agencies to integrate ground-water management programs, including addressing ground-water concerns in registration and reregistration actions.

In keeping with the President's directive and Agency policy to treat Indian tribes as states, an Indian strategy was developed in 1990 to enable Indian tribes to become involved in all areas of the pesticide program. Currently, tribes are eligible for funds for the initiation of worker protection, ground water and endangered species programs. A tribal workshop was held in 1990 concerning pesticides in ground water. Implementation of the Indian strategy is scheduled for early 1991.

In 1990, EPA devoted resources to addressing a broad spectrum of food safety concerns, including the development of better scientific data on special tolerance and residue issues, conveying scientific information on risks to the public in understandable terms, and using improved risk information in regulatory decisions. This initiative strengthens the Agency's ability to make pesticide decisions based on scientific risk assessments, and educates the public on the reasons for these decisions.

All of the sampling for the National Pesticide Survey (NPS), the first nation-wide investigation of pesticide contamination of drinking water wells, was completed in early 1990. A preliminary report of the findings was released in November 1990, and the final report is scheduled to be issued at the end of March 1991. The results of the NPS will be used to refine the Agency's Agricultural Chemicals in Ground Water Strategy and to evaluate further regulatory and state-specific approaches to protect drinking water from pesticide pollution.

Comments of state, private and public interest groups have been incorporated into the Agency's proposed Endangered Species Protection Program (ESPP), which features a revised method of consultation with the U.S. Fish and Wildlife Service on potential endangered species jeopardy, generic product labeling coupled with county bulletins and maps of endangered species habitats, and use limitations to protect endangered species. The nation-wide ESPP may be supplemented by state endangered species protection plans suitable for local conditions.

The major 1990 activity in the pesticide disposal program was the continued disposal of nation-wide dinoseb stocks. Dinoseb incineration continued through 1990, after the completion of a successful demonstration burn in 1989. The Agency is currently in the process of consolidating remaining 2,4,5-T/Silvex stocks and maintaining them in secure storage until disposal arrangements can be made.

In 1990 the Agency began evaluating environmental indicators for their feasibility in measuring the effectiveness of the pesticide program's efforts to achieve the objectives of OPTS' Four Year Strategy, particularly in the areas of reducing pesticide risks to public health and the environment. Projects were initiated in 1990 to evaluate several major new directions for environmental indicators.

## PESTICIDES
### Pesticides Program Implementation

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| **PROGRAM** | | | | | | |
| Pesticides Program Implementation | | | | | | |
| Salaries & Expenses | | $1,535.4 | $2,519.3 | $2,519.3 | $2,764.7 | $245.4 |
| | TOTAL | $1,535.4 | $2,519.3 | $2,519.3 | $2,764.7 | $245.4 |
| Pesticides Program Implementation - Grants | | | | | | |
| Abatement Control and Compliance | | $12,263.4 | $14,500.0 | $14,500.0 | $14,500.0 | 0.0 |
| | TOTAL | $12,263.4 | $14,500.0 | $14,500.0 | $14,500.0 | 0.0 |
| **TOTAL:** | | | | | | |
| Salaries & Expenses | | $1,535.4 | $2,519.3 | $2,519.3 | $2,764.7 | $245.4 |
| Abatement Control and Compliance | | $12,263.4 | $14,500.0 | $14,500.0 | $14,500.0 | |
| Pesticides Program Implementation | TOTAL | $13,798.8 | $17,019.3 | $17,019.3 | $17,264.7 | $245.4 |
| **PERMANENT WORKYEARS** | | | | | | |
| Pesticides Program Implementation | | 28.6 | 49.5 | 49.5 | 53.2 | 3.7 |
| TOTAL PERMANENT WORKYEARS | | 28.6 | 49.5 | 49.5 | 53.2 | 3.7 |
| **TOTAL WORKYEARS** | | | | | | |
| Pesticides Program Implementation | | 30.8 | 53.2 | 53.2 | 53.2 | 0.0 |
| TOTAL WORKYEARS | | 30.8 | 53.2 | 53.2 | 53.2 | 0.0 |

## Pesticides Program Implementation

### Budget Request

The Agency requests a total of $17,264,700 supported by 53.2 total workyears for 1992, an increase of $245,400 and no change in workyears from 1991. Of the request, $2,764,700 will be for the Salaries and Expenses appropriation, and $14,500,000 will be for the Abatement, Control, and Compliance appropriation, representing an increase of $245,400 in the Salaries and Expenses appropriation and no change in the Abatement, Control and Compliance Appropriation from 1991.

### PESTICIDES PROGRAM IMPLEMENTATION

### 1992 Program Request

The Agency requests a total of $2,764,700 supported by 53.2 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of $245,400 in the Salaries and Expenses Appropriation and no change in total workyears from 1991. The increase in Salaries and Expenses reflects increased personnel and support costs.

In the 1992 Budget request, the Agency is continuing to carry out the Regional/state initiative begun in 1990 to address concerns about pesticide threats to ground water, endangered species, and workers occupationally exposed to pesticides. Regional workyears are requested for ground water, endangered species, and worker protection. The Regional office staff will implement the major ground water initiatives underway in OPP and elsewhere in EPA, including the Ground Water Strategy, the Ground Water Restricted Use Rule, and the Non-Point Source Management and Wellhead Protection plans. Regional office staff will also implement the revised Worker Protection Standard, scheduled for issuance in 1991. For the Endangered Species Program, Regional offices will implement the geographically targeted program in high priority areas, manage program grants, continue education and outreach, assist states in developing and implementing state-initiated plans, and coordinate map review within the states. Headquarters and Regional office staff will continue to manage the Certification and Training (C&T) Program in cooperation with the U.S. Department of Agriculture/State Cooperative Extension Services (USDA/SCES), and provide technical assistance on other pesticide issues.

### 1991 Program

In 1991, the Agency is allocating a total of $2,519,300 supported by 53.2 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1991 the Agency is continuing to build on the initiative begun in 1990 to strengthen Regional/state capabilities to respond to increasing public concerns about ground-water contamination by pesticides, protection of endangered species from pesticides, and safety of workers occupationally exposed to pesticides. A number of activities in these areas are coming to closure in 1991.

With their completion, the Regions will work with the states to begin actual implementation. In 1991 this initiative includes implementation of major revisions to the C&T Regulations (Part 171) governing strengthened record-keeping, examination, and training requirements for initial certification, certification renewal, and sale of restricted use pesticides to non-certified persons. The Agency will continue to manage the C&T Program and provide technical assistance on pesticide issues.

1990 Accomplishments

In 1990, the Agency obligated a total of $1,535,400 supported by 30.8 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

Headquarters staff directed the development of training materials in the areas of ground water, endangered species, and worker safety. The major effort to revise the C&T regulations (Part 171) was completed.

In 1990, Regional staff emphasized correcting deficiencies in state pesticide management plans identified through Regional evaluations and negotiations. Regional staff also continued to provide technical expertise on specific issues relating to the use and application of pesticides. They also began to work with the various officials in each state to lay the groundwork for implementation of the Regional/state capability initiative in the areas of protection of ground water, workers occupationally exposed to pesticides, and endangered species.

PESTICIDES PROGRAM IMPLEMENTATION GRANTS

1992 Program Request

The Agency requests a total of $14,500,000 for this program, all of which is for the Abatement, Control, and Compliance appropriation. This represents no change from 1991.

States will continue to implement an initiative begun in 1990 to address increasing concerns about the pesticide threat to ground water, endangered species, and workers occupationally exposed to pesticides. In the ground water program, states will implement state ground water management plans. States will continue to implement an endangered species program targeted to high priority geographical areas. For the worker protection program, states will conduct activities to carry out the Worker Protection Standard. States will continue to carry out the C&T program in cooperation with USDA/SCES.

1991 Program

In 1991, the Agency is allocating a total of $14,500,000 for this program, all of which is from the Abatement, Control, and Compliance appropriation. These resources support the certification and training program, as well as the program initiated in 1990 to strengthen state capabilities to address problems in protection of ground water, workers occupationally exposed to pesticides, and endangered species.

The Agency continues to carry out cooperative agreements with state lead agencies (SLAs) to certify applicators to use Restricted Use Pesticides (RUPs). The Agency provides grants to states to support this activity. Certification grants support 53 applicator certification programs in states and territories. Under the guidance of the Regions, states are implementing certain program improvements, revising certification exams to include ground water, endangered species, chronic health effects, and other topics. EPA has an interagency agreement with USDA to provide training to pesticide applicators by working through SCES. Training programs are being developed and implemented for non-agricultural (e.g. structural, urban) applicators.

States are continuing to implement the second year of the Regional/state capability initiative. Changes to the Certification and Training Program (Part 171) will be issued in 1991, and states are developing their implementation plans. The revisions include additional record-keeping and examination requirements for SLAs, periodic renewal of certification, training for non-certified applicators using RUPs, supervision of non-certified applicators of RUPs, and continuing education for applicators.

1990 Accomplishments

In 1990, the Agency obligated a total of $12,263,400 for this program, all of which was from the Abatement, Control and Compliance appropriation.

Funding for certification agreements helped support 53 applicator certification programs in participating states and territories and in the Federally-conducted programs in Colorado and Nebraska. EPA continued its interagency agreement with USDA to provide training to pesticide applicators through an interagency agreement with USDA/SCES. Funds provided through a cooperative agreement with USDA/SCES helps support the applicator training programs.

A Regional/state initiative was begun to build capabilities in emerging pesticide areas of concern, including ground water, worker protection and endangered species. States also remedied deficiencies in state pesticide management plans identified through Regional evaluations and negotiations.

Enforcement

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PESTICIDES
Pesticides Enforcement

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | | |
| **PROGRAM** | | | | | | |
| Pesticides Enforcement Grants | | | | | | |
| Abatement Control and Compliance | | $12,392.2 | $15,803.4 | $15,803.4 | $15,803.4 | 0.0 |
| | TOTAL | $12,392.2 | $15,803.4 | $15,803.4 | $15,803.4 | 0.0 |
| Pesticides Enforcement | | | | | | |
| Salaries & Expenses | | $5,628.7 | $6,313.3 | $6,313.3 | $6,980.9 | $667.6 |
| Abatement Control and Compliance | | $545.8 | $2,187.1 | $2,187.1 | $2,187.1 | |
| Reregistration and Expedited Processing | | $1,810.3 | $1,959.7 | $1,959.7 | | -$1,959.7 |
| | TOTAL | $7,984.8 | $10,460.1 | $10,460.1 | $9,836.9 | -$623.2 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $5,628.7 | $6,313.3 | $6,313.3 | $6,980.9 | $667.6 |
| Abatement Control and Compliance | | $12,938.0 | $17,990.5 | $17,990.5 | $17,990.5 | 0.0 |
| Reregistration and Expedited Processing | | $1,810.3 | $1,959.7 | $1,959.7 | | -$1,959.7 |
| Pesticides Enforcement | TOTAL | $20,377.0 | $26,263.5 | $26,263.5 | $25,640.3 | -$623.2 |
| **PERMANENT WORKYEARS** | | | | | | |
| Pesticides Enforcement | | 125.9 | 149.0 | 149.0 | 163.8 | 14.8 |
| TOTAL PERMANENT WORKYEARS | | 125.9 | 149.0 | 149.0 | 163.8 | 14.8 |
| **TOTAL WORKYEARS** | | | | | | |
| Pesticides Enforcement | | 133.3 | 154.3 | 154.3 | 163.8 | 9.5 |
| TOTAL WORKYEARS | | 133.3 | 154.3 | 154.3 | 163.8 | 9.5 |

## Pesticides Enforcement

### Budget Request

The Agency requests a total of $24,971,400 supported by 163.8 total workyears for 1992, an increase of $667,600 and 9.5 in total workyears from 1991. Of the request, $6,980,900 will be for the Salaries and Expenses appropriation and $17,990,500 will be for the Abatement, Control, and Compliance appropriation, an increase of $667,600 in Salaries and Expenses and no increase in the Abatement, Control, and Compliance Appropriation.

### PESTICIDES ENFORCEMENT

### 1992 Program Request

The Agency requests a total of $9,168,000 supported by 163.8 total workyears for this program, of which $6,980,900 will be for the Salaries and Expenses appropriation and $2,187,100 will be for the Abatement, Control and Compliance appropriation. Of the requested workyears, 35.5 will be supported by the Reregistration and Expedited Processing Revolving Fund. This represents an increase of $667,600 for the Salaries and Expenses appropriation, no change in the Abatement, Control, and Compliance appropriation, and an increase of 9.5 total workyears. The increase in Salaries and Expenses and an increase in 2.0 total workyears reflects increased personnel costs and support the expanded development of groundwater protection enforcement requirements. An increase of 7.5 workyears supported by the Reregistration and Expedited Processing Fund will support increased enforcement of the reregistration sections of the 1988 Amendments to FIFRA '88. The FIFRA workyear increase is dependent upon passage of legislation to raise the maintenance fee cap to allow for the collection of the authorized level of $14,000,000 annually.

In 1992, 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. 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. Headquarters will develop and refine compliance monitoring strategies regarding groundwater, endangered species protection, and worker protection initiatives. In 1992, enforcement response policies will be amended to incorporate new violations and will be coordinated with other enforcement offices.

Tracking and enforcement of pesticide reregistration 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. An increase in workyears supported by the Reregistration and Expedited Processing Fund for reregistration enforcement activities will handle the enforcement burden of the accelerated pesticides reregistration program. Monitoring of voluntary suspension/cancellation of pesticides and associated disposal activities will be initiated in response to the

increased enforcement requirements of the 1988 Amendments to FIFRA. Headquarters will conduct grant guidance and state liaison activities to assure that reregistration decisions are enforced by states. The development of enforcement strategies for section 19 recalls and FIFRA section 6(g) will be carried out by Headquarters.

Headquarters will direct the OPTS laboratory data integrity program, which inspects private testing laboratories to determine compliance with Good Laboratory Practices (GLP) regulations, audits in process and scientific accuracy of completed test studies. In 1992, five existing Memoranda of Understanding (MOUs) with foreign countries will be implemented to assure continued GLP international cooperation.

The Regional pesticide compliance monitoring program will respond to situations involving substantial threats to public health and the environment from pesticides regulated under FIFRA. Regions will also manage and oversee the state and Federal pesticide enforcement cooperative agreement program. States and Indian Tribes not currently involved with the cooperative agreement program will be encouraged to participate by the Regions. The Regions will conduct inspections in states without cooperative enforcement agreements. State inspector training will be coordinated through the Regions to ensure that the statutes are properly enforced and cases are legitimately developed. Technical and compliance assistance will be conducted at the Regional level to disseminate the information to the regulated community, the public, and the states. In the laboratory data integrity program, three Regions support Headquarters by conducting inspections to monitor compliance with Good Laboratory Practices (GLP) regulations at laboratories engaged in testing in response to FIFRA requirements. An increase of 2.0 total workyears will allow Regional offices to continue to develop compliance activities to address pesticide contamination of ground water. Activities will include developing and refining specific strategies to address unique local conditions and problems.

1991 Program

In 1991, the Agency is allocating a total of $8,500,400 supported by 154.3 total workyears for this program, of which $6,313,300 is from the Salaries and Expenses appropriation and $2,187,100 is from the Abatement, Control and Compliance appropriation. Of the total workyears, 28.0 are supported by the Reregistration and Expedited Processing Fund.

In 1991, 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 eleven 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.

Two new initiatives are being implemented this year. The groundwater enforcement initiative addresses concerns regarding pesticide residues in

community and rural domestic drinking water wells. Regions conduct pesticide use enforcement inspections and case development for Federal compliance strategies which seek to prevent and remedy groundwater contamination. The container disposal initiative requires the enforcement of revised regulations on storage, disposal, transportation, and recall of pesticides and pesticide containers. These regulations are required by FIFRA 88 and provide for the revocation of primacy in States unless the Administrator determines that they have an adequate enforcement program for enforcing the container rinsate regulations. Regions are preparing guidance to assist States to enforce the new requirements.

1990 Accomplishments

In 1990, the Agency obligated a total of $6,174,500 supported by 133.3 total workyears for this program, of which $5,628,700 was from the Salaries and Expenses appropriation and $545,800 was from the Abatement, Control and Compliance appropriation. Of the total workyears, 14.3 were supported by the Reregistration and Expedited Processing Fund.

A total of 55 cooperative enforcement agreements were in place with states and territories, plus another eleven agreements with Indian Tribes and tribal organizations, in 1990. As part of the cooperative agreement program, the Agency supplemented training for state inspectors, chemists and case development staff.

In 1990, Regions implemented worker protection enforcement activities. As a result of this initiative, a large number of label changes were required and an increased level of enforcement activity needed to monitor the larger resultant regulated community was required.

PESTICIDES ENFORCEMENT GRANTS

1992 Program Request

The Agency requests a total of $15,803,400 for this program, all of which will be for the Abatement, Control and Compliance appropriation. States will ensure compliance with the worker protection and groundwater regulations.

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.

State activities will include use and re-entry investigations, pesticide producer establishment and marketplace inspections, applicator license and record inspections, and dealer record inspections.

1991 Program

In 1991, the Agency is allocating a total of $15,803,400 for this program, all of which is from the Abatement, Control and Compliance appropriation.

In 1991, 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. The states are increasingly emphasizing use inspections in the expectation that use compliance produces the greatest overall environmental benefit. State programs are being developed to enforce new container rinsate, disposal, storage, transportation, and recall provisions of the 1988 Amendments to FIFRA.

1990 Accomplishments

In 1990, the Agency obligated a total of $12,392,200 for this program, all of which was from the Abatement, Control and Compliance appropriation.

States began to 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 ensured that product labeling includes the new worker protection statements and focused on new use-related requirements under the revised regulations.

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## RADIATION

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| APPROPRIATION | | | | | |
| Salaries & Expenses | $11,872.2 | $14,473.8 | $14,473.8 | $15,150.9 | $677.1 |
| Abatement Control and Compliance | $20,481.6 | $21,712.7 | $21,712.7 | $21,612.7 | -$100.0 |
| Research & Development | $2,196.5 | $2,769.5 | $2,769.5 | $2,863.6 | $94.1 |
| TOTAL, Radiation | $34,550.3 | $38,956.0 | $38,956.0 | $39,627.2 | $671.2 |
| PERMANENT WORKYEARS | 247.7 | 298.1 | 298.1 | 312.2 | 14.1 |
| TOTAL WORKYEARS | 257.5 | 301.2 | 301.2 | 312.2 | 11.0 |
| OUTLAYS | $22,332.3 | $35,967.7 | $35,967.6 | $36,369.6 | $402.0 |
| AUTHORIZATION LEVELS | The "Indoor Radon Abatement Act of 1988" authorizes $45 million over 1989, 1990 and 1991. Authorization for the Indoor Radon Abatement Act expires on September 30, 1991. 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

The Environmental Protection Agency (EPA) program to protect the public health and environment from adverse effects of radiation exposure is derived from several statutes including: the Indoor Radon Abatement Act, the Clean Air Act, the Atomic Energy Act; the Public Health Service Act; the Uranium Mill Tailings Radiation Control Act; the Marine Protection, Research, and Sanctuaries Act; and the Superfund Amendments and Reauthorization Act. These Acts authorize a wide range of regulatory, assessment, assistance, and research activities. The Agency also performs some oversight functions for programs with enforcement authority vested in other agencies.

EPA's radiation program has four major objectives:

- Reduce adverse health effects and environmental impacts from radiation exposure through a program of standards and guidelines.
- Assess and quantify existing and emerging radiation problems and their potential impact.
- Respond to issues of serious public concern.
- Maintain the capability to respond to emergencies and to aid development and testing of federal, state, and local plans for emergency response.

To accomplish these objectives, EPA assesses and regulates sources of airborne radionuclides; evaluates and regulates radioactive waste disposal; provides site assessments and radiochemical analyses of environmental samples; operates a Radon Action Program; operates the Environmental Radiation Ambient Monitoring System (ERAMS); develops protective action guides to provide guidance to officials on preventive and remedial actions; and responds to radiological emergencies. The Office of Radiation Programs will highlight the following areas in 1992:

### Implement Existing NESHAPs and New Clean Air Act Requirements

EPA will emphasize implementation of the Clean Air Act Amendments of 1990. Activities include defining a major source of airborne radionuclides, as well as individual source categories, and evaluating the adequacy of the Nuclear Regulatory Commission (NRC) program to achieve the goals of the Act. In addition, implementation of the existing National Emission Standards for Hazardous Air Pollutants (NESHAPs) for radionuclides will continue. These activities will include: providing technical assistance; developing model state legislation for the control of radionuclides; establishing training programs for implementation at the Regional and state levels; making the air emissions data base available for "real time" use by the regions; and providing technical assistance to inspection teams. Headquarters will also continue to assist Regions with the technical review of modification, construction, waiver, and variance applications. EPA is investigating additional source categories, such as rare earth processing and geothermal electrical production.

In 1992 EPA will also work with the Department of Energy (DOE) and the NRC to establish responsibilities for implementing the final NESHAPs for facilities under their jurisdiction. EPA will continue to work with states to encourage state radiation program development and to build state capacity to accept responsibility for implementing the radionuclide NESHAPs. In response to strong recommendations by the Science Advisory Board, the Agency will review risk assessment models used to determine radiation health risks.

Address the Problem of Radon Exposure in Structures

In 1992 the Radon Action Program will continue to assess the nation's radon problems in homes, schools, workplaces, and other buildings. The final report to Congress on the results of the National Schools Radon Survey will be issued, and the Agency will initiate a technical assistance program to help states conduct surveys in schools and non-residential day care centers. The Agency will also assist two to three states and Indian nations to design and execute home radon surveys. The report to Congress on the results of the Federal workplace surveys will be completed, and protocols for measuring radon in workplaces will be developed.

The Radon Measurement Proficiency Program will be expanded to include testing for radon in water to support the promulgation of a radon drinking water standard. The Agency will continue to operate the national radon information clearinghouse, maintain the national radon database, provide national oversight to the state grant program, and collect user fees for its proficiency and training programs.

The Ad Council's national media campaign will be expanded with new messages to promote public action on radon. The Agency will also expand its work with organizations, such as the American Lung Association, to promote public action at the community level. A real estate guide will be issued to educate buyers, sellers, developers, lenders, and home inspectors about how radon should be considered in real estate transactions and ways to effectively reduce risk.

The Agency will expand work with state and local governments, building code organizations, and construction industry groups to promote the adoption of model building codes. The program will provide quality assurance/quality control on sample analysis and provide direct sample analysis, where necessary.

The Agency will continue to offer radon mitigation and prevention training through the Regional Radon Training Centers, the new House Evaluation Program, and various workshops. In addition, the Agency will design a national survey to determine the severity of the radon problems in workplaces across the country.

Provide Technical Assistance on Federal Facility Radioactive Wastes

The program will provide coordination, oversight, and technical support among Regional and headquarters offices (e.g., Hazardous Waste Divisions, Office of Federal Facility Enforcement) to ensure that radioactively contaminated Federal facilities are cleaned up to acceptable EPA risk levels consistent with the requirements of the Federal Facility Agreements.

The program is composed of three primary elements: enhancement of regional support for site specific problems addressed through the Federal Facility Agreements; development of overall guidance and laboratory support that is applicable to all Federal facility sites; and development of operational controls for site characterization, sampling, handling, analysis, treatment, and disposal of mixed waste (combination of radioactive waste and hazardous chemicals). The latter is of particular concern for DOE sites since many have substantial amounts of mixed waste.

During 1992 regional oversight of clean-ups at Federal facilities will be enhanced by providing technical support, information transfer, and guidance specific to radiation clean-up procedures. Development of risk based clean-up goals for radioactively contaminated sites will also begin, thereby addressing the fundamental issue: "How clean is clean?" The program will identify critical technology problems associated with mixed waste clean-ups and test and evaluate specific technologies that focus on the radioactive component.

Development of an EPA national "reference laboratory" for Agency-wide mixed waste analysis will begin and will include establishment of mixed waste field sampling, screening, handling, and shipping procedures. Generic EPA and DOE media-specific models to predict contaminant transport and exposure pathways at prototypical sites will be identified, evaluated, and modified if required. Radioanalytical procedures used by the Agency, other Federal agencies, states, and the private sector for analysis of soil and water contamination will be evaluated, revised, and updated. Standardized Agency-wide radioanalytical protocols will be established and site audit procedures for radionuclides developed. An integrated radiation health monitoring program for EPA employees, including radiation health and safety training, will also be implemented.

Conduct Research to Support the Radiation Program

To support EPA's Radon Action Program, the Office of Research and Development (ORD) will demonstrate radon mitigation techniques in existing homes, new construction, and schools. Cost-effective technologies for reducing levels of radon in houses built in various types of soils will be demonstrated. Based on test results, ORD will publish updated handbooks and technical manuals that detail mitigation techniques for homeowners and builders.

ORD will continue to provide monitoring and quality assurance support to laboratories that measure radionuclide emissions. Under an interagency agreement with DOE, ORD will also conduct off-site monitoring around nuclear test sites. EPA support includes long-term hydrological monitoring, developing a human surveillance investigation program, and maintaining a radiation data base.

In 1992, new research will focus on developing a better understanding of the health effects of electromagnetic radiation. The assessment program will follow developments in laboratory and epidemiology carcinogenesis research, concentrating on laboratory studies designed to determine the critical exposure parameters related to adverse effects and on epidemiology results and associated exposure measurements.

Consulting Services

The Office of Air and Radiation will fund a limited amount of consulting services in 1992. These will be limited to obtaining specialized expertise for radiochemical analyses, nuclear emergency response training, and the development of computer models.

RADIATION

| PROGRAM ACTIVITIES | ACTUAL 1990 | CURRENT ESTIMATE 1991 | ESTIMATE 1992 | INCREASE (+) DECREASE (-) 1992 VS 1991 |
|---|---|---|---|---|
| Cumulative Outputs | | | | |
| FR Notices . . . . . | 1 | 0 | 0 | 0 |
| Proposals . . . . . | 1 | 3 | 0 | -3 |
| Promulgations/Neg. Det . | 12 | 5 | 4 | -1 |
| Simpson Amend. finding . | -- | 1 | 0 | -1 |

Key for Cumulative Outputs:

1990:
- Radionuclide NESHAPs promulgated for 9 source categories
- Negative determination final for 3 source categories
- Stay for Subpart I
- Proposed rule for Phosphogypsum

1991:
- 1 low-level waste standard proposed
- 1 high level waste standard proposed
- Proposal for Elemental Phosporous
- Final rule for Underground Uranium Mines, Mill Tailings disposal, & Mill Tailings Operations
- Final rule for Phosphogypsum
- 1 final Uranium Mill Tailings Radiation Control Act standard promulgated
- Finding on NRC Program

1992:
- 1 low level waste standard promulgated
- 1 high level waste standard promulgated
- Final rule for Elemental Phosphorous
- Final rule for NRC

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RADIATION
Radiation Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Monitoring Systems & Quality Assurance - Radiation | | | | | |
| Salaries & Expenses | $276.8 | $169.1 | $169.1 | $176.9 | $7.8 |
| TOTAL | $276.8 | $169.1 | $169.1 | $176.9 | $7.8 |
| Health Effects - Radiation | | | | | |
| Salaries & Expenses | | | | $60.1 | $60.1 |
| Research & Development | | $750.0 | $750.0 | $875.0 | $125.0 |
| TOTAL | | $750.0 | $750.0 | $935.1 | $185.1 |
| Environmental Engineering and Technology - Radiation | | | | | |
| Salaries & Expenses | $1,092.2 | $1,053.5 | $1,053.5 | $872.4 | -$181.1 |
| Research & Development | $2,196.5 | $2,019.5 | $2,019.5 | $1,988.6 | -$30.9 |
| TOTAL | $3,288.7 | $3,073.0 | $3,073.0 | $2,861.0 | -$212.0 |
| TOTAL: | | | | | |
| Salaries & Expenses | $1,369.0 | $1,222.6 | $1,222.6 | $1,109.4 | -$113.2 |
| Research & Development | $2,196.5 | $2,769.5 | $2,769.5 | $2,863.6 | $94.1 |
| Radiation Research TOTAL | $3,565.5 | $3,992.1 | $3,992.1 | $3,973.0 | -$19.1 |
| **PERMANENT WORKYEARS** | | | | | |
| Monitoring Systems & Quality Assurance - Radiation | 4.4 | 4.7 | 4.7 | 4.7 | 0.0 |
| Health Effects - Radiation | | | | 1.0 | 1.0 |
| Environmental Engineering and Technology - Radiation | 18.4 | 17.7 | 17.7 | 14.7 | -3.0 |
| TOTAL PERMANENT WORKYEARS | 22.8 | 22.4 | 22.4 | 20.4 | -2.0 |
| **TOTAL WORKYEARS** | | | | | |
| Monitoring Systems & Quality Assurance - Radiation | 4.4 | 4.7 | 4.7 | 4.7 | 0.0 |

RADIATION
Radiation Research

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| Health Effects - Radiation | | | | 1.0 | 1.0 |
| Environmental Engineering and Technology - Radiation | 18.4 | 17.7 | 17.7 | 14.7 | -3.0 |
| TOTAL WORKYEARS | 22.8 | 22.4 | 22.4 | 20.4 | -2.0 |

## RADIATION

### Radiation Research

#### Principal Outputs

1992:

- Report on radon reduction via natural ventilation (Engineering).
- Report on the performance of selected radon transport blocking substrates (Engineering).
- Report on radon reduction measures in attached dwellings (Engineering).

1991:

- Annual report for calendar year 1990 on off-site surveillance around the Nevada Test Site (Monitoring).
- Annual report on laboratory radionuclide intercomparison studies (Monitoring).
- Third annual international symposium on radon and radon reduction technology (Engineering).
- Report on sub-slab depressurization for low-permeability fill soil-design (Engineering).
- Draft guidance manual on radon resistant new construction in schools (Engineering).

1990:

- Annual report for calendar year 1989 on off-site surveillance around the Nevada Test Site (Monitoring).
- Second annual international symposium on Radon and Radon Reduction Technology (Engineering).
- Update of the guidance to mitigation professionals, do-it-yourself homeowners, and State officials on radon mitigation techniques for existing homes (Engineering).
- Report on initial school mitigation studies (Engineering).

## Radiation Research

### Budget Request

The Agency requests a total of $3,973,000 supported by 81.4 total workyears for 1992, a decrease of $19,100 and 2 total workyears for 1991. Of the request, $1,109,400 will be for the Salaries and Expenses appropriation and $2,863,600 will be for the Research and Development appropriation, a decrease of $113,200 in Salaries and Expenses appropriation and an increase of $94,100 in Research and Development appropriation.

### Program Objectives

ORD 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. Scientists provide 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 research is conducted under a reimbursable arrangement with DOE. ORD also conducts a radiochemical analytical quality assurance program which supports Federal, State, and local laboratories making radioactivity measurements. ORD conducts research on demonstrating and evaluating techniques to prevent and mitigate exposure to radon gas in existing homes, new home construction, and school buildings. ORD has initiated a program investigating electromagnetic radiation (EMR).

### MONITORING SYSTEMS AND QUALITY ASSURANCE

### 1992 Program Request

The Agency requests a total of $176,900 supported by 4.7 total workyears for this research program, all of which will be for the Salaries and Expenses appropriation. This increase is requested to fund the Federal workforce needed to implement the President's program in 1992, and there is no change in total workyears.

ORD 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. ORD also provides technical expertise and guidance to Regional, State, and contractor laboratories for radiochemical analyses of environmental samples. ORD scientists conduct inter-laboratory comparison studies to provide data on the precision and accuracy of radioactivity measurements in milk, drinking water, and air.

1991 Program

In 1991, the Agency is allocating a total of $169,100 supported by 4.7 total workyears for this research program, all of which is from the Salaries and Expenses Appropriation. ORD's monitoring staff will routinely monitor off-site areas and provide support during nuclear tests to the Department of Energy at the Nevada Test Site and other installations. ORD will provide support to the site characterization studies of Yucca Mountain under consideration as a potential for the disposal of high-level radioactive waste. Research activities will include both baseline studies and monitoring during facility construction. ORD will conduct a quality assurance program for Regional, State, and contractor laboratories involved in the radiochemical analyses of radionuclides in environmental samples.

1990 Accomplishments

In 1990, the Agency obligated a total of $276,800 supported by 4.4 total workyears for this research program, all of which was from the Salaries and Expenses Appropriation. ORD published annual reports on the laboratory radionuclide intercomparison studies and the off-site surveillance program.

HEALTH EFFECTS

1992 Program Request

The Agency requests a total of $935,100 supported by 1.0 total workyear for this research program, of which $60,100 will be for the Salaries and Expenses appropriation and $875,000 will be for the Research and Development appropriation. This represents a increase of $60,100 in S&E, $125,000 in R&D, and 1.0 total workyear. The increase in S&E is to fund the Federal workforce needed to implement the President's program in 1992. Additional funds are provided for research on electromagnetic radiation (EMR). Scientists will determine the mechanism of action and the exposure conditions under which EMR promotes or induces the development of cancer, reproductive, and developmental effects. Scientists will conduct more accurate exposure assessments by quantifying the dose-response relationships and determining the appropriate measure of health hazard of EMR.

1991 Program

In 1991, the Agency is allocating a total of $750,000 from the Research and Development appropriation. ORD researchers will complete an initial assessment of the current knowledge associating exposure to EMR to various health outcomes (e.g., cancer, reproductive/developmental effects, and effects on the nervous system). ORD will identify ongoing efforts being conducted by other Federal, public and private institutions and will identify major unaddressed research issues identified as a basis for the initial program.

Congressional Directives. A total of $750,000 is for the Congressionally directed project of Electromagnetic Radiation Research.

ENVIRONMENTAL ENGINEERING AND TECHNOLOGY

1992 Program Request

The Agency requests a total of $2,861,000 supported by 14.7 total workyears for this research program, of which $872,400 will be for the Salaries and Expenses appropriation and $1,988,600 will be for the Research and Development appropriation. This represents decrease of $181,100 in S&E and $30,900 in R&D, and 3.0 total workyears. The decrease in funding reflects a reduction in research on radon mitigation for new buildings and planned increases in school mitigation.

Exposure to indoor radon gas poses a significant risk to public health. The objective of the radon mitigation research program is to develop and demonstrate technology that achieves an indoor air quality that is as free of radon as the ambient air outside. For 1992, ORD will demonstrate and evaluate mitigation techniques in existing homes, evaluate preventive measures for new homes under construction, and evaluate mitigation techniques for school buildings. Research will focus on experiments using pilot scale models to measure the relative importance of certain buildings and soil features. In the school research program, scientists will demonstrate the effectiveness of sub-slab suction systems and building pressurization via HUAC systems in a variety of geological and climatic conditions. Scientists will assess whether radon mitigation techniques presently used in houses are effective in schools and ORD will provide the results from this research to State agencies and local school districts.

1991 Program

In 1991, the Agency is allocating a total of $3,073,000 supported by 17.7 total workyears for this research program, of which $1,053,500 is from the Salaries and Expenses appropriation and $2,019,500 is from the Research and Development appropriation. ORD will develop an understanding of the fundamental physical mechanisms that influence indoor radon entries. ORD scientists will develop and demonstrate radon mitigation technologies which will reduce indoor radon levels to 4 pCi/L in both new and existing homes, and in schools. Scientists will develop techniques appropriate for a representative sample of home construction types, geological characteristics, geographic variations, and initial radon levels. ORD will develop and demonstrate radon mitigation techniques for schools and will assist the Office of Air and Radiation (OAR) in providing technical assistance to Regional offices, States, and local school authorities. ORD will examine the structural, architectural, and ventilation differences between homes and schools to determine when the unique characteristics of school buildings alter the effectiveness of previously examined mitigation techniques.

1990 Accomplishments

In 1990, the Agency obligated a total of $3,288,700 supported by 18.4 total workyears for this research program, of which $1,092,200 was from the Salaries and Expenses Appropriation and $2,196,500 was from the Research and Development Appropriation. Demonstrations of radon mitigation techniques were conducted in existing homes, new home construction, and in schools. ORD focused on those structures that were "challenging to mitigate", including crawl space sub-

structures and alternative geologies (expansive soils, coarse dry lands). Researchers in the new buildings program addressed how building designs could include sub-slab suction systems. Scientists also addressed the potential maintenance problems and long-term durability issues of existing mitigation systems. Researchers in the school radon reduction program provided the first clear indication that residential sub-slab suction systems had applicability in some larger structures. ORD staff provided technical information to community leaders and participating homeowners at these demonstration sites.

**ENVIRONMENTAL PROTECTION AGENCY**

1992 Budget Estimate

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DEPARTMENT OF ENERGY
Radiation Criteria, Standards & Guidelines

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Radiation Criteria, Standards & Guidelines | | | | | |
| Salaries & Expenses | $3,653.8 | $4,004.9 | $4,004.9 | $4,145.3 | $140.4 |
| Abatement Control and Compliance | $1,836.6 | $2,194.4 | $2,194.4 | $2,194.4 | |
| TOTAL | $5,490.4 | $6,199.3 | $6,199.3 | $6,339.7 | $140.4 |
| **TOTAL:** | | | | | |
| Salaries & Expenses | $3,653.8 | $4,004.9 | $4,004.9 | $4,145.3 | $140.4 |
| Abatement Control and Compliance | $1,836.6 | $2,194.4 | $2,194.4 | $2,194.4 | |
| Radiation Criteria, Standards & Guidelines TOTAL | $5,490.4 | $6,199.3 | $6,199.3 | $6,339.7 | $140.4 |
| **PERMANENT WORKYEARS** | | | | | |
| Radiation Criteria, Standards & Guidelines | 57.0 | 61.6 | 61.6 | 61.6 | 0.0 |
| TOTAL PERMANENT WORKYEARS | 57.0 | 61.6 | 61.6 | 61.6 | 0.0 |
| **TOTAL WORKYEARS** | | | | | |
| Radiation Criteria, Standards & Guidelines | 59.5 | 61.6 | 61.6 | 61.6 | 0.0 |
| TOTAL WORKYEARS | 59.5 | 61.6 | 61.6 | 61.6 | 0.0 |

## Radiation Criteria, Standards, and Guidelines

### Budget Request

The Agency requests a total of $6,339,700 supported by 61.6 total workyears for 1992. Of the request, $4,145,300 will be for the Salaries and Expenses appropriation and $2,194,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $140,400 in the Salaries and Expenses appropriation, no increase in the Abatement, Control and Compliance appropriation, and no increase in workyears from 1991.

### RADIATION CRITERIA, STANDARDS, AND GUIDELINES

### 1992 Program Request

The Agency requests a total of $6,339,700 supported by 61.6 total workyears for this program, of which $4,145,300 will be for the Salaries and Expenses appropriation and $2,194,400 will be for the Abatement, Control and Compliance appropriation. This represents an increase from 1991 of $140,400 for the Salaries and Expenses appropriation. This increase is requested to fund the Federal workforce needed to implement the President's program in 1992.

In 1992 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 NESHAPs rules issued in calendar year 1989. The Agency will continue to promote the transfer of NESHAPs implementation responsibilities to the states. This effort will include the development of guidance and criteria for state permit programs for the radionuclide NESHAPs. Under the Clean Air Act Amendments of 1990, the Agency will also define a major source for radionuclides and determine whether the NRC oversight program provides an adequate margin of safety. The Agency will develop model state guidance for the control of airborne radionuclides, establish training programs for implementing these standards at the Regional and state levels, maintain a national data base related to the implementation program, and provide technical assistance to enforcement efforts.

EPA will promulgate final standards for the disposal of low-level and high-level radioactive wastes. The Agency will also begin to develop guidance on the clean up of residual radioactivity. Over 20,000 sites (including DOE facilities and over 100 nuclear power reactors) exist where radioactive materials are used. Many of these will be candidates for decommissioning over the next several decades. Without controls, lifetime health risks could be as high as one in 100. Billions of dollars potentially could be wasted by inadequate clean-up efforts.

As part of its nuclear accident response efforts, EPA will issue draft interim protective action guides for ingestion (food and water) pathways, initiate development of a draft interim protective action guide for accident contamination recovery, initiate development of a training program for implementing these protective action guides, and complete training programs for

the early phase (evaluation and sheltering) and relocation protective action guides.

In 1992 EPA will also perform exposure assessment, modeling and measurement studies to identify and characterize sources of electromagnetic radiation. The Agency will begin to evaluate what is known about mitigation techniques and their utility, and continue to develop public information/outreach materials

1991 Program

In 1991 the Agency is allocating a total of $6,199,300 supported by 61.6 total workyears for this program, of which $4,004,900 is from the Salaries and Expenses appropriation and $2,194,400 is from the Abatement, Control and Compliance appropriation.

In 1991 EPA is beginning the implementation of the Clean Air Act Amendments of 1990. Activities include defining a major source, as well as individual source categories, and evaluating the adequacy of the NRC program to achieve the goals of the new Act. In addition, implementation of the existing NESHAPs will continue. These activities will include: providing technical assistance; developing model state legislation for the control of radionuclides; establishing training programs for implementation at the Regional and state levels; making the air emissions data base available for "real time" use by the Regions; and providing technical assistance to inspection teams. Headquarters will also continue to assist Regions with the technical review of modification, construction, waiver, and variance applications. EPA is investigating additional source categories, such as rare earth processing and geothermal electrical production.

EPA is proposing standards for the disposal of low-level and high-level radioactive wastes, and will consider the feasibility of a negotiated rulemaking for high-level waste. The Agency is also beginning to develop guidance on the clean up of residual radioactivity. Over 20,000 sites (including DOE facilities and over 100 nuclear power reactors) exist where radioactive materials are used. Many of these will be candidates for decommissioning over the next several decades.

Protective action guides for ingestion (food and water) and recovery are being developed and will be reviewed by other federal agencies. A training program will be initiated for the recovery protective action guide. The Agency is seeking clearance with the other Federal agencies for the issuance of proposed revisions to the guidance for the general public on radiation protection. Risk assessment work is being conducted in support of all of the activities carried out in this program.

EPA is also evaluating the scientific literature on the potential carcinogenicity of electromagnetic radiation. The final report will be completed in 1991. Also, EPA is conducting field measurement surveys and modeling studies to investigate particular source problems, and will develop informational materials for the public.

1990 Accomplishments

In 1990 the Agency obligated $5,490,400 and 59.5 total workyears for this

program, of which $3,653,800 was from the Salaries and Expenses appropriation and $1,836,600 was from the Abatement, Control and Compliance appropriation.

In 1990 EPA concentrated on three major program areas: addressing airborne radionuclides, establishing standards for radioactive waste management, and developing Federal guidance. The Agency focused the 1990 airborne radionuclides effort on implementing the final NESHAPs rules issued in calendar year 1989. The Agency initiated a program to promote the transfer of NESHAPs implementation responsibilities to the states and provided guidance to those states seeking delegation of authority. EPA also conducted pilot Regional and state training programs and provided guidance to the Regions on implementing the regulations. In addition, the Agency worked to develop a national data base on radionuclide emissions for the implementation program. Finally, the Agency reviewed requests for construction, waivers, or alternative standards.

As part of the effort to address the problem of radioactive waste disposal, EPA continued its efforts to publish a notice of proposed rulemaking for the land disposal of low-level radioactive waste, including naturally occurring and accelerator produced materials. In order to provide required implementation assistance to the Regions and states, the Agency worked to develop site evaluation guidance and a site evaluation model as well as other user-friendly computer models.

EPA also worked to develop new high-level waste standards as required by a court remand. The Agency worked to complete a background information document and an economic assessment. In addition, the Agency worked to augment existing standards for inactive mill tailings sites under the Uranium Mill Tailings Radiation Control Act with the repromulgation of standards for ground water protection at these sites.

The Agency maintained its radiofrequency measurement capabilities and conducting limited field studies for electromagnetic radiation. The Agency continued to provide technical advice, assistance, and oversight.

As part of its nuclear accident response efforts, EPA issued revised draft interim protective action guides for early phase and relocation and initiated development of draft interim protective action guides for ingestion pathways. The Agency is conducted a training program to help ensure the uniform application of protective action guides nationwide in emergency situations.

RADIATION
Radiation Program Implementation

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| PROGRAM | | | | | | |
| Radiation Program Implementation | | | | | | |
| Salaries & Expenses | | $392.7 | $857.8 | $857.8 | $901.2 | $43.4 |
| | TOTAL | $392.7 | $857.8 | $857.8 | $901.2 | $43.4 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $1,426.0 | $2,583.5 | $2,583.5 | $3,026.9 | $443.4 |
| Radiation Program Implementation | TOTAL | $1,426.0 | $2,583.5 | $2,583.5 | $3,026.9 | $443.4 |
| PERMANENT WORKYEARS | | | | | | |
| Radiation Program Implementation | | 6.5 | 15.5 | 15.5 | 17.0 | 1.5 |
| TOTAL PERMANENT WORKYEARS | | 27.1 | 51.0 | 51.0 | 57.1 | 6.1 |
| TOTAL WORKYEARS | | | | | | |
| Radiation Program Implementation | | 7.5 | 17.0 | 17.0 | 17.0 | 0.0 |
| TOTAL WORKYEARS | | 30.3 | 54.1 | 54.1 | 57.1 | 3.0 |

## Radiation Program Implementation

### Budget Request

The Agency requests a total of $901,200 supported by 17.0 total workyears for 1992, all of which will be for the Salaries and Expenses appropriation. This represents an increase of $43,400 in the Salaries and Expenses appropriation and no change in total workyears from 1991.

### RADIATION PROGRAM IMPLEMENTATION

### 1992 Program Request

The Agency requests a total of $901,200 supported by 17.0 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase from 1991 of $43,400 for the Salaries and Expenses appropriation. The increase is requested to fund the Federal workforce needed to implement the President's program in 1992.

In 1992 Regional offices will review approximately 40 emergency response plans and test 65. When accidental releases of radioactivity occur, the Regions will assist state agencies in interpreting Agency information and guidance and present information regarding radiation levels to the public. Regional staffs will participate and assist states in identifying and assessing sites that are contaminated with radioactivity and will serve as a liaison between headquarters and field operations in remedial action programs for sites in their Regions.

Regional offices will continue to work with their states to encourage delegation of authority for the radionuclide NESHAPs. The Regions will also review and make decisions on applications from regulated facilities for construction permits, modifications to facilities, and waivers and exemptions. Regional staff will also provide technical assistance for enforcement activities and necessary coordination between headquarters and radiation facilities when the national program is directly involved in implementing radionuclides NESHAPs. Finally, the Regions, along with headquarters, will assist the states in developing permitting programs under the new Act.

The Regions will provide information on radiation problems posed by electromagnetic field exposures. Technical assistance will be provided to state and local radiation programs in their investigation of special problems and sources of electromagnetic fields.

### 1991 Program

In 1991 the Agency is allocating a total of $857,800 supported by 17.0 total workyears for this program, all of which is from the Salaries and Expenses appropriation.

In 1991 the Regions are participating fully in all aspects of the radionuclide NESHAPs implementation program. Currently, many state radiation

programs are not adequate to assume delegated authority for implementing the radionuclide NESHAPs. Consequently, the Agency must bear primary responsibility for implementing the program. Much of this task will fall on the Regional offices. They are performing many of the initial permitting functions while at the same time working to strengthen state radiation programs to accept delegated authority for implementing the radionuclide NESHAPs. The Regions are also reviewing applications from regulated facilities for construction permits, modifications to facilities, and waivers and exemptions. Regional staff are also providing technical assistance for radionuclide NESHAPs enforcement activities.

The testing and evaluation of state emergency response planning continues to be an important element of Regional operations, along with the review of updated plans. EPA continues to assist states in the development of radiological emergency response plans and will formally review these plans along with other Federal agencies. Also, the Regions are involved with state agencies and the public in presenting and interpreting Agency information and guidance regarding radiation problems in their area.

The Regions 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 also respond to special problems involving actual or potential radiation releases or exposures.

1990 Accomplishments

In 1990 the Agency obligated a total of $392,700 supported by 7.5 total workyears for this program, all of which was from the Salaries and Expenses appropriation.

In 1990 the Regions worked to participate in all aspects of the implementation program for emission sources within their geographic boundaries covered by NESHAPs for airborne radionuclides. The Regions also provided coordination necessary where the national program is directly involved in implementation of the radionuclide NESHAPs in areas such as waivers and alternate requirements.

In addition, the Regional radiation program continued to focus on emergency preparedness and technical assistance to states, including participation in Regional Assistance Committees, testing and evaluating emergency response plans, and review of updated state and local emergency response plans. The Regions continued as the primary reviewer of environmental impact statements for radiation facilities, such as uranium mills and mines, and radioactive waste disposal facilities.

RADIATION
Radiation Environmental Impact Assessment

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | (DOLLARS IN THOUSANDS) | | | | |
| PROGRAM | | | | | | |
| Radiation Environmental Impact Assessment | | | | | | |
| Salaries & Expenses | | $2,796.2 | $3,317.5 | $3,317.5 | $3,431.3 | $113.8 |
| Abatement Control and Compliance | | $29.5 | $30.3 | $30.3 | $30.3 | |
| | TOTAL | $2,825.7 | $3,347.8 | $3,347.8 | $3,461.6 | $113.8 |
| TOTAL: | | | | | | |
| Salaries & Expenses | | $5,423.4 | $6,662.8 | $6,662.8 | $6,869.3 | $206.5 |
| Abatement Control and Compliance | | $18,341.2 | $19,518.3 | $19,518.3 | $19,418.3 | -$100.0 |
| Radiation Environmental Impact Assessment | TOTAL | $23,764.6 | $26,181.1 | $26,181.1 | $26,287.6 | $106.5 |
| PERMANENT WORKYEARS | | | | | | |
| Radiation Environmental Impact Assessment | | 41.7 | 51.0 | 51.0 | 51.0 | 0.0 |
| TOTAL PERMANENT WORKYEARS | | 85.7 | 102.1 | 102.1 | 102.1 | 0.0 |
| TOTAL WORKYEARS | | | | | | |
| Radiation Environmental Impact Assessment | | 44.5 | 51.0 | 51.0 | 51.0 | 0.0 |
| TOTAL WORKYEARS | | 89.8 | 102.1 | 102.1 | 102.1 | 0.0 |

## Radiation Environmental Impact Assessment

### Budget Request

The Agency requests a total of $3,461,600 supported by 51.0 total workyears for 1992. Of the request, $3,431,300 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 $113,800 in the Salaries and Expenses Appropriation.

### RADIATION ENVIRONMENTAL IMPACT ASSESSMENT

### 1992 Program Request

The Agency requests a total of $3,461,600 supported by 51.0 total workyears of which $3,431,300 will be for the Salaries and Expenses appropriation and $30,300 will be for Abatement, Control and Compliance appropriation. This represents an increase from 1991 of $113,800 for the Salaries and Expenses Appropriation. The increase is requested to fund the Federal workforce needed to implement the President's program in 1992.

In 1992 the Agency will continue work to enhance its ability to respond to nuclear accidents. This effort will include training additional radiation staff and evaluating the mobile laboratories for equipment refitting or replacement. Emergency response teams will monitor rocket launches in which radioactive materials are involved.

The Agency will continue to augment or replace its radiation monitoring, emergency response, and data equipment. As a major component of the overall nuclear accident response capability, the Environmental Radiation Ambient Monitoring System operates 268 stations to sample air, precipitation, surface water, and milk. These stations not only routinely provide information on ambient radiation levels but also have the capability to provide near real-time information on radiation levels caused by or resulting from nuclear accidents. In addition, Agency staff periodically participate in tests that measure Federal emergency response capabilities to ensure that personnel and equipment are maintained in a state of readiness.

Technical analyses and associated quality assurance programs will continue in support of regulatory development and implementation efforts. Support for radionuclide NESHAPs implementation will continue through compliance field studies and background information documents for low-level and high-level radioactive waste will be completed. Laboratory support will be provided to states and Regions for radionuclide NESHAPs implementation including the analysis of air samples. In addition, limited laboratory analytical support will be made available to states and Indian nations requiring technical assistance to address unique radiation problems.

In 1992 the Agency will continue to enhance its ability to respond to nuclear accidents. This effort will include training additional radiation staff

and evaluating the mobile laboratories for equipment refitting or replacement.

1991 Program

In 1991 the Agency is allocating a total of $3,347,800 supported by 51.0 total workyears for this program, of which $3,317,500 is from the Salaries and Expenses appropriation and $30,300 is from the Abatement, Control and Compliance appropriation.

In 1991 EPA is continuing to support the development, implementation, and enforcement of standards and guidance. This includes support for implementing NESHAPs for airborne radionuclides and collecting and analyzing air samples from facilities to verify compliance with existing standards.

EPA continues to maintain emergency response capabilities at two field locations and headquarters and to participate in field exercises scheduled by the Federal Emergency Management Agency. In 1991 EPA participated in the launch of the Ulysses satellite. Other activities include coordinating EPA Regional review and testing of state emergency response plans; assisting other EPA offices and state radiological programs; and operating the Environmental Radiation Ambient Monitoring System.

Analytical support for the development of protective action guides is also continuing. Other activities include offering limited training and technical support to states and to Indian nations having other problems related to radiation contamination. Support provided to radiation regulatory activities is focused on implementation of NESHAPs and the development of final rules for the disposal of low-level and high-level radioactive waste. Specific activities in support of NESHAPs implementation include field studies around regulated facilities to determine compliance; development of analytical procedures; and adaption of complex computer models for easy use by states and industry.

1990 Accomplishments

In 1990 the Agency obligated a total of $2,825,700 supported by 44.5 total workyears for this program of which $2,796,200 was from the Salaries and Expenses appropriation and $29,500 was from the Abatement, Control and Compliance appropriation.

In 1990 EPA continued to support the development, implementation, and enforcement of standards and guidance. This included support for implementing NESHAPs for airborne radionuclides and collecting and analyzing air samples from facilities to verify compliance with existing standards.

EPA continued to maintain emergency response capabilities at two field locations and headquarters and participated in field exercises scheduled by the Federal Emergency Management Agency. In calendar year 1990 EPA participated in the response to three potentially uncontrolled releases of radiological contamination: discharges at the Rocky Flats nuclear weapons plant near Denver, Colorado; abandoned stores of radium at the Radium Chemical warehouse in New York City, and the launch of the Atlantis Space Shuttle carrying the nuclear powered satellite, Galileo. In 1990 EPA extended 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. Other activities included coordinating EPA Regional review and testing of state emergency response plans; participation in contingency planning for the space shuttle launch carrying the nuclear powered satellite, Ulysses, in the Autumn of 1990; assisting other EPA offices and state radiological programs; and operating ERAMS.

RADIATION
Radon Action Program

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| Radon Action Program | | | | | |
| Salaries & Expenses | $2,627.2 | $3,345.3 | $3,345.3 | $3,438.0 | $92.7 |
| Abatement Control and Compliance | $17,476.6 | $10,488.0 | $10,488.0 | $10,388.0 | -$100.0 |
| TOTAL | $20,103.8 | $13,833.3 | $13,833.3 | $13,826.0 | -$7.3 |
| **TOTAL:** | | | | | |
| Salaries & Expenses | $2,627.2 | $3,345.3 | $3,345.3 | $3,438.0 | $92.7 |
| Abatement Control and Compliance | $17,476.6 | $10,488.0 | $10,488.0 | $10,388.0 | -$100.0 |
| Radon Action Program TOTAL | $20,103.8 | $13,833.3 | $13,833.3 | $13,826.0 | -$7.3 |
| **PERMANENT WORKYEARS** | | | | | |
| Radon Action Program | 44.0 | 51.1 | 51.1 | 51.1 | 0.0 |
| TOTAL PERMANENT WORKYEARS | 44.0 | 51.1 | 51.1 | 51.1 | 0.0 |
| **TOTAL WORKYEARS** | | | | | |
| Radon Action Program | 45.3 | 51.1 | 51.1 | 51.1 | 0.0 |
| TOTAL WORKYEARS | 45.3 | 51.1 | 51.1 | 51.1 | 0.0 |

## Radon Action Program

### Budget Request

The Agency requests a total of $13,826,000 supported by 51.1 total workyears for 1992, a decrease of $7,300 and no change in total workyears from 1991. Of the request, $3,438,000 will be for the Salaries and Expenses appropriation and $10,388,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $92,700 in the Salaries and Expenses appropriation, a decrease of $100,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears.

In 1992 the Agency expects to collect $2,500,000 in fees from five programs: the Radon Measurement Proficiency (RMP) program, the Radon Contractor Proficiency (RCP) program examination, the classroom training course, the field training course, and the instructor training course.

### RADON ACTION PROGRAM

### 1992 Program Request

The Agency requests a total of $13,826,000 supported by 51.1 total workyears for this program, of which $3,438,000 will be for the Salaries and Expenses appropriation and $10,388,000 will be for the Abatement, Control and Compliance appropriation. This represents an increase of $92,700 in the Salaries and Expenses appropriation, a decrease of $100,000 in the Abatement, Control and Compliance appropriation, and no change in total workyears.

In 1992 the Radon Action Program will continue to assess the nation's radon problems in homes, schools, workplaces, and other buildings. The final report to Congress on the results of the National Schools Radon Survey will be issued, and the Agency will initiate a technical assistance program to help states conduct surveys in schools and non-residential day care centers. The Agency will also assist two to three states and Indian nations to design and execute home radon surveys. The report to Congress on the results of the Federal workplace surveys will be completed, and protocols for measuring radon in workplaces will be developed. In addition, the Agency will design a national survey to determine the severity of the radon problems in workplaces across the country.

The Agency will continue to offer radon mitigation and prevention training through the Regional Radon Training Centers, the House Evaluation Program, and various workshops. The Agency will expand work with state and local governments, building code organizations, and construction industry groups to promote the adoption of model building codes.

The program will provide quality assurance/quality control on sample analysis and provide direct sample analysis, where necessary. The Agency will continue to operate the national radon information clearinghouse, maintain the national radon database, provide national oversight to the state grant program, and begin the collection of user fees for its proficiency and training programs.

The Ad Council's national media campaign will continue with new messages to promote public action on radon. The Agency will also continue its work with the American Lung Association to promote public action at the community level. A real estate guide will be issued to educate buyers, sellers, developers, lenders, and home inspectors about how radon should be considered in real estate transactions and ways to effectively reduce risk. The Agency will continue to offer radon mitigation and prevention training through the Regional Radon Training Centers, the House Evaluation Program, the new House Evaluation Program, and various workshops.

1991 Program

In 1991 the Agency is allocating a total of $13,833,300 supported by 51.1 total workyears for this program, of which $3,345,300 is from the Salaries and Expenses appropriation and $10,488,000 is from the Abatement, Control and Compliance appropriation.

In 1991 EPA continues a comprehensive Radon Action Program through partnerships with states to minimize the health risks of radon exposure. The Agency will continue to assess the nation's radon problems in homes, schools, and other public buildings. The Agency will also complete design of the national survey of radon in schools and initiate the survey. This survey will target high-risk areas, characterize the nature and extent of radon contamination in the nation's school buildings, and be complemented by the transfer of more detailed information about measurement and mitigation techniques to schools throughout the country. EPA is also providing assistance to three to five states in the design and execution of state-wide radon surveys, as well as to two Indian nations.

The national Radon Contractor Proficiency Program continues to evaluate the capability of mitigation firms and make the information available to the states and public. EPA is providing radon mitigation and prevention training through regional training centers; the House Evaluation Programs, which provide hands-on radon measurement, mitigation, and prevention training to state personnel, private contractors, and home builders; the transfer of measurement and mitigation information to school officials through hands-on training and workshops; and the Radon Diagnostic and Mitigation Training Course. The Agency is completing national model building standards for release to the public. The Agency is also working with building code organizations and local governments to promote the adoption of these standards.

The Agency continues to operate the national Radon Measurement Proficiency Program and provide information to the states and the public on the proficiency of measurement firms. EPA is also providing assistance to states in dealing with critical radon problems and continues to develop the capabilities of state programs through oversight of the state grant program. The Agency is developing a national radon database and a national radon information clearinghouse. The Agency will also promulgate user fee regulations.

EPA is completing revisions to the revised edition of the public information brochure, "A Citizen's Guide to Radon." The updated brochure will include information on health risks to special populations, costs and feasibility of radon mitigation, and a series of recommended action levels. The Agency is continuing the national media campaign in cooperation with the Ad Council and is developing a cooperative agreement with the American Lung Association to conduct

public eduction and information programs. Other public information activities will include developing information and audiovisual materials for target audiences, co-sponsoring regional meetings with selected national organizations, and sponsoring a national radon symposium.

State programs being funded through the Federal grants include activities such as carrying out radon surveys; establishing radon assessment, mitigation, and control programs; developing public information and educational materials; developing data storage and management systems; operating radon hotlines; and purchasing analytical equipment. Under this program element, headquarters, in cooperation with the regions, develops the specific criteria used to evaluate state grant applications, reviews applications, and administers the grant funds.

Congressional Directives. A total of $100,000 is for the Congressionally directed project of training minority and women contractors on radon mitigation.

1990 Accomplishments

In 1990 the Agency obligated a total of $20,103,800 supported by 45.3 total workyears, of which $2,627,200 was from the Salaries and Expenses appropriation and $17,476,600 was from the Abatement, Control and Compliance appropriation.

In 1990 EPA continued to implement a comprehensive Radon Action Program to address and reduce the health impacts of radon exposure. The Agency completed the field operation and data collection phase of the national survey of radon in residences and the design of a national survey of radon in schools, and worked to develop protocols for measuring radon in schools, initiated development of measurement protocols for workplaces, and assisted Federal agencies with workplace studies. EPA also continued to assist individual states and Indian nations in the design and execution of surveys, including the collection of screening measurements in homes and the presentation of analyses of potentially high-risk radon areas to the public.

The Agency also initiated the national Radon Contractor Proficiency Program to evaluate the capability of firms to mitigate radon. EPA assisted Federal agencies through mitigation training and continued the transfer of measurement and mitigation information to school officials through hands-on training and workshops. Other radon mitigation and prevention activities included continuing the House Evaluation Program, development of national model building standards, and the offering of the Radon Diagnostic and Mitigation Training Course to augment the regional training center program.

EPA is also continued the national Radon Measurement Proficiency Program to assure consumers of the ability of firms to accurately measure radon levels. In addition, the Agency continued efforts to develop the capabilities of state and local personnel through three regional training centers and established one additional regional training center to be shared by EPA Regions 4 and 6. The Agency also worked to design a national indoor radon database and a national radon information clearinghouse to collect and disseminate information on the radon problem.

EPA worked to develop technical and public information materials for distribution to state and Federal officials, the private sector, and homeowners. The Agency continued data evaluation and analysis to revise "A Citizen's Guide

to Radon" and prepared a draft of the document. EPA conducted a national media campaign in cooperation with the Ad Council and continued regional meetings for health professionals with the American Medical Association. EPA and the American Medical Association worked to jointly developing a brochure on radon health effects for distribution this year.

RADIATION
Radon Action Program Implementation

| | | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 VS 1991 |
|---|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | | |
| **PROGRAM** | | | | | | |
| Radon Action Program Implementation | | | | | | |
| Salaries & Expenses | | $1,033.3 | $1,725.7 | $1,725.7 | $2,125.7 | $400.0 |
| | TOTAL | $1,033.3 | $1,725.7 | $1,725.7 | $2,125.7 | $400.0 |
| **TOTAL:** | | | | | | |
| Salaries & Expenses | | $1,033.3 | $1,725.7 | $1,725.7 | $2,125.7 | $400.0 |
| Radon Action Program Implementation | TOTAL | $1,033.3 | $1,725.7 | $1,725.7 | $2,125.7 | $400.0 |
| **PERMANENT WORKYEARS** | | | | | | |
| Radon Action Program Implementation | | 20.6 | 35.5 | 35.5 | 40.1 | 4.6 |
| TOTAL PERMANENT WORKYEARS | | 20.6 | 35.5 | 35.5 | 40.1 | 4.6 |
| **TOTAL WORKYEARS** | | | | | | |
| Radon Action Program Implementation | | 22.8 | 37.1 | 37.1 | 40.1 | 3.0 |
| TOTAL WORKYEARS | | 22.8 | 37.1 | 37.1 | 40.1 | 3.0 |

## Radon Action Program Implementation

### Budget Request

The Agency requests a total of $2,125,700 supported by 40.1 total workyears for 1992, an increase $400,000 and 3.0 total workyears from 1991. All of the request will be for the Salaries and Expenses appropriation.

### RADON ACTION PROGRAM IMPLEMENTATION

### 1992 Program Request

The Agency requests a total of $2,125,700 supported by 40.1 total workyears for this program, all of which will be for the Salaries and Expenses appropriation. This represents an increase of $400,000 in the Salaries and Expenses appropriation and an increase of 3.0 total workyears from 1991. The increases will be used to increase regional training activities, promote the adoption of radon building codes at the state and local levels, and conduct public information and educational activities.

In 1992 Regional staff will continue to work through partnerships developed with states to implement the Agency's Radon Action Program. Regional staff will work with states to conduct EPA-assisted statewide surveys, and will help states that have completed their surveys to interpret the results and design effective follow-up programs. Two to three states and Indian Nations will conduct surveys in 1992. The Regions will also continue to participate in the House Evaluation Programs.

The Regions will be the focal point for implementation of the radon state grant program in 1992. Regions will review state grant applications against established criteria and will ensure that grant funds are used effectively.

The Regions will work with the headquarters program, the states, and local governments in the design and implementation of surveys in schools, daycare centers, and workplaces, especially in Federal buildings, to further identify elevated radon levels. The Regions will provide direct oversight to the regional training centers, which also conduct testing for the national Radon Contractor Proficiency Program. The Regions will also work with states and local governments for the adoption of radon building standards and will provide advice and assistance to states that want to establish additional consumer protection functions, such as licensing measurement and mitigation contractors.

The Regions will continue to provide information to states and members of the public. They will participate in or conduct educational programs, symposia, and workshops for state and local officials, contractors, and the public.

### 1991 Program

In 1991 the Agency is allocating a total of $1,725,700 supported by 37.1 total workyears for this program, all of which is from the Salaries and Expenses

appropriation.

The regional activities of the Radon Action Program focus on the dissemination of technical skills and information to the states to develop their radon capabilities. These activities include implementation of the House Evaluation Program which offers radon mitigation and prevention training, helping the states design and implement surveys, providing assistance to states in their development of radon monitoring capabilities, overseeing the regional radon training centers which provide measurement and mitigation training, administering the state grants program in cooperation with headquarters, and providing technical assistance as requested. Support is also provided to the states to help them deal with the most critical radon problems as they are discovered; this support is aimed at promoting state self-sufficiency. The regions also distribute EPA's public information materials, develop local public information campaigns, and participate in numerous radon public awareness activities (speeches, talk shows, school presentations, media interviews, etc.). Regional personnel address public interest groups, the real estate and construction industries, and others interested in the public health benefits that can be realized by reducing radon exposures.

1990 Accomplishments

In 1990 the Agency obligated a total of $1,033,300 supported by 22.8 total workyears, all of which was from the Salaries and Expenses appropriation.

In 1990 Regional offices continued to coordinate activities to support the implementation of the radon program by providing direct support to the states in the development of state capabilities. This included 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 House Evaluation Program, and technical advice and assistance to state and local governments.

The Regions oversaw the operation of the regional training centers and provided assistance to states in their development of applications to the state grant program. The Regions also participated in the presentation of the Radon Diagnostic and Mitigation Training Course. The Regions provided support to states to deal with critical radon problems. The Regions also continued to assist in the distribution of public information materials, conduct outreach programs to the public and local agencies as part of a continuing radon educational program, and participate in radon public awareness activities.

RADIATION
Radon State Grants Program

| | ACTUAL 1990 | ENACTED 1991 | CURRENT ESTIMATE 1991 | REQUEST 1992 | INCREASE + DECREASE - 1992 vs 1991 |
|---|---|---|---|---|---|
| | | | (DOLLARS IN THOUSANDS) | | |
| **PROGRAM** | | | | | |
| **Radon State Grants Program** | | | | | |
| Abatement Control and Compliance | $835.1 | $9,000.0 | $9,000.0 | $9,000.0 | 0.0 |
| TOTAL | $835.1 | $9,000.0 | $9,000.0 | $9,000.0 | 0.0 |
| **TOTAL:** | | | | | |
| Abatement Control and Compliance | $835.1 | $9,000.0 | $9,000.0 | $9,000.0 | 0.0 |
| Radon State Grants Program TOTAL | $835.1 | $9,000.0 | $9,000.0 | $9,000.0 | 0.0 |

RADIATION

Radon State Grant Program

Budget Request

The Agency requests a total of $9,000,000 for 1992. All of the request will be for the Abatement, Control and Compliance appropriation. This represents no change for the Abatement, Control and Compliance appropriation from 1991.

RADON STATE GRANT PROGRAM

1992 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 1991.

In 1992 EPA will continue to 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 continue to include activities such as carrying out radon surveys; establishing radon assessment, mitigation, and control programs; developing public information and education materials; developing data storage and management systems; operating radon hotlines; and purchasing analytical equipment.

Headquarters, in cooperation with the Regions, will continue to develop criteria used to evaluate state use of grant funds. Administration of the grant program will include giving consideration to whether states have made reasonable efforts to ensure adoption of radon model construction standards and techniques. State implementation of previously awarded radon grant funds will be reviewed and also given consideration as new funds are distributed.

1991 Program

In 1991 the Agency is obligating a total of $9,000,000 for this program, all of which is from the Abatement, Control and Compliance appropriation.

In 1991 state programs being funded through these Federal grants include activities such as carrying out radon surveys; establishing radon assessment, mitigation, and control programs; developing public information and educational materials; developing data storage and management systems; operating radon hotlines; and purchasing analytical equipment. Under this program element, headquarters, in cooperation with the Regions, develops the specific criteria used to evaluate state grant applications, reviews applications, and administers the grant funds.

1990 Accomplishments

In 1990, for the first time, EPA issued 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 included activities such as radon surveys; assessment, mitigation, and control programs; programs to develop

public information and educational materials; development of data storage and management systems; operating radon hotlines; and purchase of analytical equipment.

U.S. Environmental Protection Agency
Region III
Room 1670