

This document has been prepared to introduce to you the Environmental Protection Agency and its programs. The document is organized to acquaint you with the legislation authorizing EPA activities, the history and present organization of EPA, the pollution control programs operated by the Agency, and the EPA budget.

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I. EPA LEGAL AUTHORITIES

AIR

The Clean Air Act as amended in 1970 and 1977 is the basic authority for the air pollution control program designed to protect the public health and welfare. The major features of the Act are as follows:

National Ambient Air Quality Standards - The Act directs EPA to establish national ambient air quality standards for specific pollutants to protect the public health and welfare. Standards have been set for sulfur dioxide, particulates, oxides of nitrogen, carbon monoxide, hydrocarbons, ozone and lead.

State Implementation Plans - To meet, maintain and enforce the standards each State must formulate an implementation plan. EPA must review each plan; if a State fails to submit a satisfactory plan, EPA is required to prepare a plan. If a State fails to enforce its plan, EPA may enforce it. The 1977 amendments delay the attainment dates of areas violating the ambient air standards and require each State to submit a revised plan which must provide for attainment of standards as soon as practicable, but not later than December 1982 (1987 under some circumstances).

New Source Performance Standards - The Act requires EPA to set standards of performance for new and modified stationary sources of pollution. These standards are not ambient standards; they are direct emission limitations for specific types of sources, such as portland cement plants and coal-fired power plants.

Hazardous Air Pollutants - For stationary source pollutants which are particularly hazardous, the Act directs EPA to set National emission standards. These standards apply to existing as well as new sources.

Auto Emission Controls - The Act requires EPA to establish regulations requiring a 90 percent reduction in the emissions of carbon monoxide and hydrocarbons from 1970 model year levels. The hydrocarbon reduction is to be effective with 1980 model year cars. (The Act originally established a compliance date of the 1975 model year to meet this reduction.) Nitrogen oxide emissions are to be reduced to 0.1 grams per mile in 1981, a reduction of approximately 75% from pre-control emission levels. Particulate emissions standards for classes or categories of vehicles are also required beginning with the 1981 model year. Reductions in emissions from heavy duty vehicles, generally corresponding to the degree of stringency imposed on passenger cars, are also imposed in 1983 and 1985.

WATER QUALITY

The Clean Water Act of 1972 as amended in 1977 is the primary authority for the water pollution control programs. The act is designed to make our waters fishable and swimable.

Effluent Limitations - The law directs EPA to set effluent limitations to limit discharges of pollutants from industrial and municipal sources. Municipalities not achieving a mid 1977 goal of "secondary treatment" can apply for an extension. These extensions, issued on a case by case basis, can not be valid beyond mid 1983. The law also provides the choice of three enforcement options for industries failing to meet the mid 1977 goal of reaching "best practicable control technology". Effluent limitations

requiring the application of "best available technology" for industrial non-toxic and non-conventional sources must be achieved no later than July 1, 1987. The Act also requires the setting of effluent limitations for certain toxic chemicals by mid 1980 and the implementation of these standards by no later than mid 1984.

Wastewater Discharge Permits - The Act authorized EPA or States to issue permits for discharges of pollutants by municipal and industrial sources. The permits generally conform with effluent limitations.

Water Quality Standards - Water quality standards are established for all navigable surface waters. Standards consist of a designation of the use of the stream (recreational purposes, agricultural and industrial, public water supply, etc.) and water quality criteria sufficient to protect the stream for such uses. Criteria are established for such parameters as temperature, dissolved oxygen, microbiological content, toxic pollutants, etc. Wherever the effluent limitations are inadequate to achieve water quality standards more stringent limitations will be applied to the sources discharging into these bodies.

Municipal Pollution Control - The Clean Water Act provides a program of Federal grants for construction or major modification of wastewater treatment plants. The Federal share for most projects is 75 percent, however, in some cases may rise to 85 percent. The Clean Water Act authorizes \$24.5 billion from FY 78 - FY 82.

Planning - The Act places major emphasis on planning. Facility planning is carried out by local agencies to ensure that the most effective and efficient type of waste treatment will be selected. Integrated planning and management agencies are required to be established for all major metropolitan areas; Statewide planning is also required. The Act authorizes Federal financial support to these State and local agencies.

Ocean Dumping - Under the Marine Protection, Research and Sanctuaries Act of 1972, EPA is authorized to designate ocean dumping sites, issue permits for ocean dumping which may include implementation plans to phase out ocean dumping, and assess penalties for improper ocean dumping.

WATER SUPPLY

The Safe Drinking Water Act of 1974 is the basic authority for the Water Supply Program.

Drinking Water Regulations - The Safe Drinking Water Act directs EPA to establish national drinking water regulations to protect public health and welfare.

State Enforcement Responsibility - Safety of drinking water is primarily the concern of State and local governments. However, if a State fails to comply with national public health standards or to satisfy minimum State program requirements, EPA is required to establish and enforce a program to supervise public water systems in the State.

Protection of Underground Sources of Drinking Water - The Safe Drinking Water Act requires control of underground injections which could endanger underground sources of drinking water. EPA is required to publish regulations containing minimum requirements for State programs, including prohibition of underground injections which are not authorized by State permits.

SOLID WASTES

The Resource Conservation and Recovery Act of 1976 is the authority for the Solid Wastes Program.

Hazardous Waste Management - The Act requires that each facility that treats, stores or disposes of hazardous wastes have a permit issued by a State or EPA. EPA will publish criteria for identifying hazardous waste and a list of such wastes by January 1980. Standards governing the generation, transport, treatment, storage or disposal of hazardous wastes will also be published by January 1980. The Act authorizes Federal grant support for States that wish to operate hazardous waste programs, including the issuance of permits. If States do not establish hazardous waste programs, EPA must assume the responsibility required by the Act.

Solid Waste Disposal Planning - The Act encourages States to develop environmentally sound plans for solid waste disposal. The Act requires that an inventory be conducted of all waste disposal sites. Federal grant support of State and local programs is authorized through FY 1979.

Research, Development and Demonstration - The Act authorizes the Agency to conduct research, development and demonstrations in areas such as resource recovery, resource conservation and solid waste disposal.

Technical Assistance - EPA is to provide State and local governments with technical assistance through teams of Federal, State and local employees or contractors.

PESTICIDES

The Federal Insecticide, Fungicide and Rodenticide Act as amended in 1972, 1975, and 1978 is the basic authority for the Pesticides program. It authorizes a comprehensive program to regulate the manufacturing, distribution and use of pesticides as well as major research efforts into the effects of pesticides.

Pesticide Registration - All pesticides must be registered and classified for "general" use or "restricted" use. Those placed in the restricted category may be used only by, or under the supervision of, certified applicators.

Applicator Certification - States with EPA-approved certification plans train and certify pesticide applicators to use restricted pesticides. EPA must train and certify applicators in the remaining few States without plans.

Prohibition of Misuse - The use of registered pesticides in a manner inconsistent with label instructions is prohibited by the Act. The label directions and precautions are approved by EPA at the time of registration. Misuse of a pesticide is subject to civil and criminal penalties.

State Authorities - Under the Act, a State may register certain pesticide products or issue experimental permits to meet special local needs.

Federal Assistance - The Act authorizes Federal assistance to the States for enforcement and to help develop and administer applicator certification programs.

Research and Monitoring - EPA may conduct research on pesticides and alternatives, issue experimental use permits, and monitor pesticide use and presence in the environment.

Tolerance Levels - Under authority of the Federal Food, Drug, and Cosmetic Act, EPA establishes tolerance levels for pesticide residues on food and animal feed.

RADIATION

There is no single Act which establishes the authority for EPA's radiation abatement and control program. Under Reorganization Plan No. 3 of 1970, which established EPA, certain broad authorities were transferred to EPA. These together with authorities vested under other Federal Acts, but applicable to the EPA radiation program, establish the parameters for the program.

Standards and Guidelines - Under Reorganization Plan No. 3 the functions of the Federal Radiation Council were transferred to EPA. EPA issues radiation protection guidance to all Federal agencies. In addition, under the Atomic Energy Act of 1954, EPA was transferred the function of the

Atomic Energy Commission to establish generally applicable environmental radiation protection standards.

Monitoring and Analysis - Under the Public Health Service Act, (42 USC 241) Section 301, EPA has the authority to monitor radiation levels in the environment.

State Assistance - The Public Health Service Act (42 USC 243), Section 311 provides the authority to assist States in radiation control efforts; the Federal Radiation Guidance authorizes the establishment of cooperative programs with States.

Ocean Dumping - The Marine Protection Research and Sanctuaries Act of 1972 provides EPA with the authority to control the ocean disposal of radioactive wastes.

NOISE

The Noise Control Act of 1972 is the basic legislation for EPA's noise abatement and control program. This act was amended in what is known as the Quiet Communities Act of 1978.

Noise Emission Standards - The Act directs EPA to identify products which are major sources of noise, and to establish noise emission standards, necessary to protect the public health and welfare, taking into consideration technology and costs. EPA is to enforce compliance with these standards.

Aircraft and Airport Noise Standards - The Act directs EPA to submit proposed regulations to control aircraft and airport noise to the Federal Aviation Agency (FAA) which shall consider them prior to prescribing the same regulations, a modified regulation or no regulation. If EPA believes the FAA's action does not protect the public health and welfare, it may request the FAA to review its decision and make public the reason for its action.

Labeling - The Act requires EPA to prescribe labeling regulations for any product which emits noise capable of affecting the public health and welfare or which is sold on the basis of its effectiveness in reducing noise.

Railroad Noise Standards - The Act directs EPA to establish noise emission standards for railroads taking into account the best available technology and the cost of compliance. These regulations are enforced by the Department of Transportation.

Interstate Motor Carrier Noise Standards - The Act directs EPA to establish standards for motor carriers similar to those for railroads.

Noise Research - EPA is directed, under the 1978 amendments, to determine the psychological and physiological effects of noise on the public welfare with special emphasis on the non-auditory effects of noise.

State & Local Grants - The 1978 amendments gives EPA specific authority to assist State and local governments in order to encourage the development of effective noise control. EPA is empowered to provide direct technical assistance in the areas of monitoring, manpower development and other areas.

TOXIC SUBSTANCES

The Toxic Substances Control Act of 1976 is the authority for the Toxic Substances Program.

Testing - If the EPA finds (1) that a chemical substance may present an unreasonable risk to health or the environment, and (2) there are insufficient data to predict health or environmental effects, manufacturers may be required to conduct tests to evaluate a chemical's characteristics such as persistence, acute toxicity, or carcinogenic or mutagenic effects.

Priority of Chemicals to be Tested - The Act establishes an interagency committee to develop a priority list of chemical substances to be tested. Up to 50 chemicals may be listed by the committee; within one year of a chemical's listing EPA must initiate testing requirements or publish reasons for not requiring testing. The chemicals for which EPA may require testing are not limited to those on the list.

Premarket Notification - Manufacturers of new chemical substances must notify EPA 90 days prior to their manufacture. EPA may determine if there is inadequate information to evaluate the health and environmental effects of new chemicals and require the acquisition of additional data before the chemical is manufactured or distributed in commerce. The manufacture of a chemical for a significant new use also requires premarket notification.

Regulation of Chemical Substances - EPA may prohibit the manufacture, sale, use or disposal of new or existing chemical substances if the Agency finds these activities to present an unreasonable risk to health or environment. EPA may also regulate the amount of a chemical that may be

manufactured and used or the manner in which the chemical is used, or require chemicals to be labeled with instructions as to proper use or disposal.

Polychlorinated Biphenyls - The Act requires EPA to issue labeling and disposal regulations for polychlorinated biphenyls as well as prohibit their production and distribution after July 1979.

Research and Monitoring - The Act directs EPA, in cooperation with the Department of Health, Education and Welfare, to undertake research and monitoring programs.

II. HISTORY AND ORGANIZATION

EPA was created through an executive reorganization plan designed to consolidate certain Federal Government environmental activities into a single agency. The plan (Reorganization Plan No. 3 of 1970) was sent by the President to Congress on July 9, 1970, and EPA was established as an Independent Agency in the Executive Branch on December 2, 1970.

EPA was formed by amalgamating 15 components from 5 departments and independent agencies. Water quality responsibilities were transferred from the Interior Department (the Federal Water Quality Administration) and the Department of Health, Education and Welfare (the Bureau of Water Hygiene). Other activities transferred from HEW included the National Air Pollution Control Administration and the Bureau of Solid Waste Management.

In addition, EPA acquired the Department of Agriculture's authority to register pesticides and to regulate their use; the Food and Drug Administration's authority to set tolerance levels for pesticides which occur in or on food and to monitor compliance with those limits; and a portion of the Department of Interior's pesticides research program.

Finally, EPA assumed some of the Atomic Energy Commission's and HEW's authority for setting environmental radiation protection standards. The Agency also absorbed the duties of the Federal Radiation Council.

Organizationally, EPA is headed by an Administrator, who is supported by a Deputy Administrator and six Assistant Administrators (See chart). Three of the Assistant Administrators are responsible for "functionalized" activities, i.e., activities which cut across all programs. These

activities are planning and management, enforcement, and research and development. The remaining program activities have been grouped under three other Assistant Administrators on a media or pollutant basis, e.g., water pollution, air pollution, solid waste, toxic substances, etc. The activities carried out by these offices are primarily policy development, standards and criteria development, and support and evaluation of regional activities.

EPA has made major progress in decentralizing its operating programs. It has established regional offices in conformance with the standard Federal regional boundaries and has assigned major responsibilities for carrying out EPA programs and policies to the regional offices. These include the authority to implement and enforce standards, to conduct monitoring and surveillance programs, and to provide technical and financial assistance to State and local governments.

EPA is working to increase State participation type activities thru delegation where permitted and desired by the States. One of the larger activities where selective delegations is occurring is the Wastewater Construction Grants Program.

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Office of Civil Rights		
Doris C. Thompson.....	(202)	755-0555
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William N. Hedeman, Jr.....	(202)	755-0777
Office of General Counsel		
Joan Z. Bernstein.....	(202)	755-2511
Office of International Activities		
Alice B. Popkin.....	(202)	755-2780
Office of Legislation		
Charles S. Warren.....	(202)	755-2930
Office of Public Awareness		
Joan M. Nicholson.....	(202)	755-0700
Office of Regional and Intergovernmental Operations		
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Edward Hanley	(202)	755-2911
Office of Planning and Evaluation		
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Office of Resources Management		
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Office of General Enforcement		
Richard Wilson.....	(202)	755-2640
Office of Water Enforcement		
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Office of Mobile Source and Noise Enforcement		
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Office of Water Programs Operations		
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Office of Solid Waste		
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 Dr. Thomas A. Murphy, (Acting)..... (202) 755-0820

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 Office of Testing and Evaluation
 Warren R. Muir..... (202) 755-4895
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 Marilyn C. Bracken..... (202) 755-8040

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 Region IX
 Paul DeFalco, Jr..... (415) 556-2320
 Region X
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MAJOR FACILITIES OF EPA

Environmental Research Laboratory
Narragansett, Rhode Island

Office of Air Quality Planning and Standards
Durham, North Carolina

Motor Vehicle Emission Laboratory
Ann Arbor, Michigan

Environmental Research Laboratories
Research Triangle Park, North Carolina

Environmental Research Laboratory
Athens, Georgia

Environmental Research Laboratory
Gulf Breeze, Florida

Eastern Environmental Radiation Facility
Montgomery, Alabama

Environmental Research Laboratories
Cincinnati, Ohio

Environmental Research Laboratory
Duluth, Minnesota

Robert S. Kerr Environmental Research Laboratory
Ada, Oklahoma

National Environmental Investigation Center
Denver, Colorado

Environmental Monitoring and Support Laboratory
Las Vegas, Nevada

Environmental Research Laboratory
Corvallis, Oregon

III. PROGRAM SUMMARIES

AIR

The fundamental objective of the air pollution program is the protection of public health and welfare from the harmful effects of air pollution. The Clean Air Act mandates this goal be attained through the prevention and control of harmful substances in the ambient air. Existing clean air is to be protected from significant deterioration, and future increases in emissions are to be minimized in a manner which does not place particular regions of the country at a competitive disadvantage.

The Clean Air Act envisions the development and implementation of air pollution control strategies as State responsibility, while the Federal government is responsible for setting minimally acceptable standards to assure the protection of public health and welfare. There are State controls on stationary sources and transportation systems, and Federal controls on new motor vehicles, certain new industrial sources and sources emitting hazardous pollutants.

As a basis for setting standards the Environmental Protection Agency (EPA) identifies those air pollutants which are a major national problem. EPA compiles all scientific evidence relating to the impact and effect of each pollutant after which a standard is set establishing allowable ambient concentrations. Two types of standards are developed: primary standards provide a margin of safety to protect public health, while secondary standards protect public welfare (the effect of air pollution on plants, animals and materials).

National Ambient Air Quality Standards have been established for sulfur dioxide, nitrogen oxides, carbon monoxide, particulates, hydrocarbons, ozone and lead. With the exception of ozone, these pollutants are directly produced by sources such as automobiles, power plants and industrial processes. Ozone is formed by photochemical reactions in the atmosphere involving hydrocarbons and oxides of nitrogen.

Sulfur oxides result from burning fuel containing sulfur or from chemical processes involving sulfur compounds. Major sources include coal and oil fired power plants and boilers, copper and lead smelters, chemical plants and petroleum refineries. Particulates include compounds ranging from ordinary wind-blown dust to a fly ash emitted by power plant boilers and highly toxic compounds escaping from various industrial processes.

Hydrocarbons are a major component of automobile exhaust, but are also emitted from petroleum refineries, gasoline stations, dry cleaning plants, paints and solvents, the use of asphalt in pavement and the spraying of pesticides. Carbon monoxide is emitted mostly by automobiles, although industrial and residential boilers add a small amount.

Nitrogen oxides can be emitted from any situation in which fuels are burned at high temperatures. Major sources are automobiles and power plants.

Lead is emitted into the air from two principal sources: automobiles and industrial plants, such as non-ferrous smelters. The need for other standards for pollutants such as sulfates and inhalable particulates are under review for future action. In addition, existing standards are periodically reviewed and evaluated in light of new scientific evidence.

EPA sets New Source Performance Standards (NSPS), which establish strict limits on emissions, to insure that new factories built in polluted areas do not exacerbate the air pollution problem. These standards also help clean the air in areas with lower pollution levels. By establishing and enforcing uniform rules for new plants, such standards help insure that the stringency of air pollution regulations is not the basis for a State's gaining or losing industries. New Source Performance Standards have been set for 28 categories of sources, including iron and steel plants, copper, zinc and lead smelters, and fossil-fuel-fired steam generators. By 1982, the most significant industrial sources of air pollution will have New Source Performance Standards, which require that they use the best pollution control technology available.

Another area where Federal regulation is the primary method of control is the establishment of National Emission Standards for Hazardous Air Pollutants which apply directly to all facilities that emit toxic substances. EPA has set standards for asbestos, beryllium, mercury and vinyl chloride, and is considering control of benzene and arsenic as hazardous air pollutants.

Motor vehicles are responsible for most of the man-made emissions of carbon monoxide and a substantial proportion of hydrocarbon and oxides of nitrogen emissions. EPA, through its mobile source air pollution control program, regulates allowable emissions from new vehicles and controls the pollution performance of in-use vehicles. Specifically, the Agency sets emission standards for automobiles, trucks, motorcycles and aircraft, assesses the performance of vehicles in-use in relation to those

standards, assures that new motor vehicles and engines covered by emissions standards are capable of meeting them for their useful life, and assures the quality of the data used for determining compliance with fuel economy standards. Implementation of vehicle inspection and maintenance programs and transportation control measures such as carpools, bus lanes and mass transit, are important aspects of State strategies for meeting clean air goals.

A State Implementation Plan is the basic document in which a State outlines its strategy for meeting clean air goals. The plan includes the State's regulations for specific sources; the dates by which these sources must meet certain emission standards; how the State proposes to review new industrial facilities to see that they do not violate air pollution rules; what it plans to do about inspecting in-use vehicles to insure that pollution control equipment is properly maintained; alternative transportation control measures; and other air pollution programs and regulations the State has adopted. The State Implementation Plan is reviewed by EPA to make sure it meets the requirements of Federal law and EPA regulations.

As a result of the 1977 Amendments all States will have to revise their State Implementation Plans. States have divided their air quality control regions into two types -- non-attainment and attainment areas. A non-attainment area is any region which violates an air quality standard for a given pollutant and is subject to the non-attainment area requirements of the Act. Regions which do not violate air quality standards for specific pollutants are called attainment areas and are subject to the Prevention of Significant Deterioration requirements of the Act.

The non-attainment amendments set new attainment dates for areas violating the air quality standards. The new attainment date for all pollutants is 1982. For ozone and carbon monoxides, extensions to 1987 are available in certain cases. By January 1, 1979, States must submit revised State Implementation Plans which provide for attainment of the standards. If adequate plans are not approved by EPA by July 1979, the States are subject to sanctions, such as loss of Federal highway funds and sewage treatment plant grant funds.

The State Implementation Plan revision required by the 1977 Amendments for non-attainment areas is an important process involving state and local governments as well as the public. The plan requires the use of reasonably available control technology, an inventory of actual emission from all sources, and new construction permits for all new sources. A State must show that it will achieve emission reductions to comply with the standards by the appropriate date. States which ask for the additional extension until 1987 must establish a program to weigh alternative sites for new sources, establish a timetable for vehicle inspection and maintenance programs and identify other measures necessary to attain and maintain the air quality standards.

The basic idea behind maintaining clean air in attainment areas (i.e., those areas where air quality is better than the national ambient air quality standards) is to limit additional pollution to minimal amounts.

The section of the law Preventing Significant Deterioration (PSD) is specifically aimed at protecting regions of the U.S. such as National parks, Indian lands and recreation areas, which have clean air. New construction

in areas relating to the prevention of significant deterioration require a case-by-case determination of best available pollution control technology in addition to the limits on incremental air pollution.

Long-term progress (1972-1977) can be seen in achieving compliance with the National Ambient Air Quality Standards for total suspended particulates, sulfur dioxide, and carbon monoxide nationally. The long-term national trend in ozone has been stable, with a decreasing trend in California and slightly increasing trend in the rest of the Nation.

Nitrogen dioxide trends are stable in California. However, nationally nitrogen dioxide levels tend to be increasing based on three to four years of data.

WATER QUALITY

Despite many noted improvements, over half of the country's river basins are affected by pollution. This pollution includes oxygen demanding bacteria, nitrogen and phosphorous compounds, algae, suspended solids, and industrial waste including toxic liquids and heavy metals. These pollutants come from the discharge of waste from industrial, commercial, agricultural, and municipal sources as well as runoff from activities that cover a broad land area and are associated with agriculture, silviculture (forestry), mining and construction.

The emphasis of the water quality program has been on controlling the discharge of pollutants into the waterways from specific industrial and municipal sources. Pollution from these sources is generally easier to control (as compared to controlling runoff from agriculture and similar activities) the composition of the pollutants can be more easily

determined, and control measures are easier to implement. Three major methods are utilized under the Clean Water Act to control point source pollution; issuing wastewater discharge permits, promulgating effluent guidelines and improving the coverage and efficiency of publicly owned waste treatment works.

Wastewater discharge permits generally require industrial sources to reduce the level of pollution to that achievable with the "best practicable technology". Permits to be issued in the future will require the reduction of pollution to the level attainable with the "best available technology economically achievable" by no later than July 1, 1987. The permits include schedules for installation of control equipment or process changes. Virtually all of the major industrial and municipal dischargers have permits. EPA encourages State assumption of this program; 32 States have accepted this responsibility.

EPA is developing Best Available Technology (BAT) guidelines to regulate 65 classes of priority toxic pollutants for 21 industrial sources. These guidelines must be set by mid 1980 and implemented no later than July 1, 1984.

Through the wastewater treatment construction grants program, the coverage and effectiveness of publicly owned sewage treatment plants is being upgraded. A large proportion of the Nation's population is presently served by sewage systems that do not provide adequate wastewater treatment. The grants cover 75 to 85 percent of the eligible costs of planning, designing and constructing sewage treatment plants -- either

the construction of new plants or modifications in existing plants. The Clean Water Act authorizes \$24.5 billion of Federal assistance for FY 1978-FY 1982. Of this, \$8.7 billion has been appropriated thru FY 1979.

Other aspects of the water quality program include planning assistance to control pollution in major segments of river basins, including storm water runoff and runoff from broad land areas. This effort is currently being coordinated through the newly developed State EPA agreement process. Additional programs include technical assistance to State and local authorities and research and development into the health and environmental effects of pollutants and means of controlling them. Grant assistance is also provided to State agencies to assist them in their permit issuance, monitoring and enforcement activities.

The major emphasis in the water quality program has been on issuing "first round" wastewater discharge permits (those designed to reduce the level of non-toxic or conventional pollutants, to that achievable with the best practicable technology) and awarding construction grants. The current objective is to successfully address threats to public health and aquatic ecosystems. To achieve this goal, the program will emphasize a reorientation from conventional to toxic pollutant control, the environmental rather than the public works nature of the construction grants program, and the delegation of more water quality management functions to the States.

EPA Construction Grants

FY 1979 Allotments

<u>State</u>	<u>Allotments</u>
Alabama.....	\$53,189,100
Alaska.....	20,709,000
Arizona.....	32,128,000
Arkansas.....	31,117,400
California.....	329,323,400
Colorado.....	38,050,800
Connecticut.....	45,858,100
Delaware.....	20,709,000
Dist of Col.....	20,709,000
Florida.....	158,904,600
Georgia.....	80,425,600
Hawaii.....	32,836,300
Idaho.....	20,709,000
Illinois.....	215,137,900
Indiana.....	114,637,000
Iowa.....	53,648,800
Kansas.....	36,460,300
Kentucky.....	60,545,000
Louisiana.....	52,290,300
Maine.....	31,042,900
Maryland.....	115,047,000
Massachusetts.....	122,357,300
Michigan.....	171,081,500
Minnesota.....	77,414,600
Mississippi.....	40,009,900
Missouri.....	103,367,100
Montana.....	20,709,000
Nebraska.....	22,800,700
Nevada.....	20,709,000
New Hampshire.....	36,489,300
New Jersey.....	147,924,700
New Mexico.....	20,709,000
New York.....	439,897,200
North Carolina.....	82,040,900
North Dakota.....	20,709,000
Ohio.....	267,788,600
Oklahoma.....	38,431,900
Oregon.....	53,735,800
Pennsylvania.....	180,649,100
Rhode Island.....	21,752,800
South Carolina.....	48,732,500
South Dakota.....	20,709,000
Tennessee.....	64,140,000
Texas.....	180,723,600
Utah.....	20,709,000
Vermont.....	20,709,000
Virginia.....	81,187,700
Washington.....	73,260,300
West Virginia.....	74,150,800
Wisconsin.....	80,777,700
Wyoming.....	20,709,000
American Samoa.....	2,551,400
Guam.....	3,081,500
Northern Mariana Islands.....	570,300
Puerto Rico.....	48,600,000
Trust Territory of Pacific.....	5,766,700
Virgin Islands.....	<u>1,565,600</u>
Total.....	\$4,200,000,000

WATER SUPPLY

The primary objective of the water supply program is to assure that the public is provided with safe drinking water. Today there are more than 240,000 public water supply systems serving approximately 170 million people. Many of these systems are not using the most effective equipment and techniques to collect, purify and deliver potable water to the public.

Federal studies in selected States have shown that (1) more than half of the facilities providing drinking water have serious deficiencies, (2) more than three quarters of the operators are inadequately trained, (3) the vast majority of systems are unprotected from accidental connection with contaminated water, and (4) more than three quarters of the systems are not subjected to adequate surveillance or monitoring. Other studies report that during the period 1971-1977, there were 192 reported outbreaks of disease or poisoning attributed to drinking water which resulted in 36,800 illnesses. This represents only those acute clinical cases that were reported and does not include the chronic effects whose impact may take many years to accumulate.

The passage of the Safe Drinking Water Act in December 1974, and amendments passed in November 1977, have broadened EPA's authority and responsibility to regulate the quality of the nation's drinking water regulations, with the States having the major responsibility for enforcing these regulations. Primary regulations are designed to protect public health to the extent feasible, taking technology, treatment techniques, and costs into consideration. Secondary regulations will describe the contaminant level required to protect public welfare and will apply to

such characteristics as the odor and appearance of drinking water.

Interim primary regulations were promulgated by the EPA in December 1975 with an effective date for State enforcement of June 1977. Secondary regulations will be promulgated in 1979.

The Safe Drinking Water Act also requires EPA to develop regulations for the protection of underground sources of drinking water. The Act specifically requires that a State program: (1) shall prohibit any underground injection which is not authorized by a permit issued by the State, (2) shall require that the applicant for a permit to inject must satisfy the State that drinking water sources are free from danger; and (3) shall include inspection, monitoring, record-keeping, and reporting requirements. The responsibility for controlling underground injections remains a State function.

EPA is aiding States to develop water supply enforcement and underground permit programs by providing technical and financial assistance through grant programs. EPA is compiling a survey of the quality and availability of rural drinking water supplies which is expected to be completed during 1979.

Federal financial assistance for the Drinking Water program has increased from its fiscal 1977 total of \$52.5 million to the fiscal 1979 level of \$70.6 million. Approximately 74 percent of the 1979 appropriation will be used to assist State and local governments in abatement and control efforts. By fiscal year 1979, ^{2.}52 States will have submitted applications for public water systems supervision grants, 48 States will have accepted primary enforcement responsibilities, and 18 States will have submitted applications for underground injection control grants.

SOLID WASTES

Many billions of tons of waste are generated in the United States every year, of which at least 35 million are potentially hazardous -- that is toxic, flammable, corrosive, or reactive. Potential health and environmental effects vary considerably, from the direct threat of hazardous wastes to the less direct threat from wastes such as abandoned cars, municipal refuse, and wastes from confined animal feeding operations.

The Resource Conservation and Recovery Act of 1976 gives EPA broad authority to regulate the disposal of hazardous wastes; encourages the development of solid waste management plans and non-hazardous waste regulatory programs by States; prohibits open dumping of wastes; and provides for a national research, development and demonstration program for improved solid waste management and resource conservation techniques.

The control of hazardous wastes will be undertaken by identifying and tracking hazardous wastes as they are generated, insuring that hazardous wastes are properly contained and transported, and regulating the storage, disposal or treatment of hazardous wastes. EPA will develop criteria for identifying hazardous wastes, and promulgate a list of hazardous wastes by January 1980. Regulations applicable to generators, transporters and operators of facilities that dispose of solid wastes will also be promulgated by January 1980. The regulations will include requirements for recordkeeping, labeling, and the use of a manifest system, to insure that all hazardous waste is designated only for authorized treatment, storage or disposal facilities. These facilities will be authorized by permits, issued by EPA or States; permits will be issued to facilities that comply with standards to be promulgated by EPA. EPA will

encourage States to develop hazardous waste management programs and issue permits, and Federal grant support of State hazardous waste programs is authorized by the Act. If States do not develop hazardous waste management programs EPA will be required to do so.

A major objective of the Resource Conservation and Recovery Act is to protect the environment and conserve resource through the development and implementation of solid waste plans by States. EPA will publish guidelines to assist States to develop plans which will establish environmentally sound waste disposal and resource conservation practices and provide for the establishment of necessary State regulatory powers. The Act also requires that an inventory be conducted of all waste disposal sites to determine whether they are in compliance with sanitary landfill criteria to be established by EPA. Open dumps are to be closed or upgraded within 5 years of being inventoried. A major objective of this provision is to protect the quality of ground and surface water from leachate and surface runoff contamination. The Act authorizes Federal financial and technical assistance to encourage States to develop solid waste programs.

The Act recognizes the need to develop and demonstrate waste management practices that are not only environmentally sound and economical but also conserve resources. The Act requires EPA to undertake a number of special studies on subjects such as resource recovery from glass and plastic waste, and managing the disposal of sludge and tires. An Interagency Resource Conservation Committee has been established to report to the President and the Congress on the economic, social and environmental consequences of present and alternative resource conservation and resource recovery techniques.

PESTICIDES

Pesticides are of enormous benefit to man, particularly in the area of agriculture production, sanitation, and disease control. Nearly a billion pounds of pesticides, embracing 30,000 to 35,000 pesticide products formulated from more than 1,400 chemical compounds, are used annually in the United States. The use of pesticides, especially in agriculture and particularly for cotton and corn production, is widespread, and has increased the health risk to humans and the potential of damage to the environment. In 1973 there were over 2800 hospital admissions resulting from the improper use of pesticides that involved farmworkers, applicators, formulating plant workers, and children. Hazardous levels of pesticides found in wild life tissues demonstrate the potential for adverse effects from less toxic but slower degrading pesticides like DDT, aldrin, dieldrin, chlordane, heptachlor, and toxaphene (chlorinated hydrocarbons). These compounds, soluble in body fat, are passed on to humans through the food chain, and their effects on human health may take too many years to appear.

Three specific approaches comprise EPA's pesticide program: (1) registration, (2) use management, and (3) research and monitoring. The 1972, 1975, and 1978 amendments to the Federal Insecticide, Fungicide, and Rodenticide Act require EPA to register pesticide products for general or restricted use. Products are registered only if they perform their intended functions without unreasonable adverse effects on the environment, including humans. The registration of a pesticide may be cancelled at any time that available information indicates continued use of the pesticide may result in unreasonable adverse effects on the environment. If a

registered pesticide poses an imminent threat to human health or the environment, EPA may suspend its registration immediately, and take the product off the market.

The use of pesticides is controlled. Only certified applicators or persons under their direct supervision may apply pesticides registered for restricted use. States certify the applicators, and training is provided through a joint effort by EPA, the Department of Agriculture's Extension Service, and State agencies. To date, 1,341,000 private applicators and 282,474 commercial applicators have received training, and of these, approximately 85 percent have been certified.

EPA conducts monitoring and research activities to determine the health and environmental effects of pesticides. Researchers consider both acute and chronic, long-term, health effects in their epidemiological studies of pesticide exposure, with particular emphasis on new pesticides. In addition, National Science Foundation and Department of Agriculture researchers help to develop environmentally safe, alternative pest control techniques. EPA routinely samples pesticide products from manufacturing establishments and the market place as part of an enforcement program to insure compliance with registration requirements and labeling instructions.

RADIATION

The EPA radiation program focuses on preventing all available exposure of people to ionizing radiation without offsetting benefits (An example of ionizing radiation is x-ray). EPA pursues this goal through three interdependent roles: (1) the development of standards and criteria,

(2) assessment of the environmental impact of technology employed by other Federal agencies, and (3) surveillance of radiation levels in the environment.

The need for EPA to set standards for exposure to non-ionizing radiation, such as microwave, radar, etc., is being reviewed. EPA and the Nuclear Regulatory Commission have divided responsibilities with respect to standard setting and guidance for radiation exposure from nuclear fuel cycles. EPA has the authority for issuing standards for the protection of the environment from sources of radiation, and has issued standards for the total amount of radiation exposure from facilities in the uranium fuel cycle. EPA also develops radiation standards and guidelines for other Federal agencies, which are then implemented by these agencies in their own facilities and through regulations that they promulgate and enforce. The Nuclear Regulatory Commission is responsible for developing, implementing and enforcing standards for individual nuclear facilities in the uranium fuel cycle.

EPA is working on standards for both short-lived and long-lived radio-nuclides. Long-lived nuclides are relatively permanent pollutants and their control is particularly important in view of the expected growth in the nuclear industry. Presently EPA is developing standards for disposal of high level wastes, for the control of hazards at active and inactive uranium mill tailing sites, nuclear accident protective action guidelines, cleanup guidelines for areas contaminated by plutonium and guidance for occupational exposure to radiation. EPA provided guidance to Federal agencies on appropriate limitation of exposure from medical x-rays. This has been promulgated and work is underway to control exposure from radium and uranium from phosphate plants.

In the area of technology assessment, EPA performs independent environmental analyses of radiation technologies being used or proposed for use by other Federal agencies. Environmental Impact Statements, required by the National Environmental Policy Act, are prepared by other agencies whenever nuclear power plants are authorized or whenever new technologies are proposed for introduction. The statements are analyzed by EPA; these analyses have had considerable effect on proposed programs and the public's acceptance of them. The storage of spent fuel from power reactors and related policies have been assessed. Proposals for the solidification and disposal of the defense waste at Savannah River were reviewed. An active role was taken in the Interagency Review Group (IRG) for radioactive waste management including the leadership role of the subgroup for Federal Involvement. A continuing effort in this area is evaluation of the probabilities and potential consequences of accidental release of radioactive material. This work will provide a basis for establishing guidance in the area of emergency response planning.

EPA carries on long range studies such as evaluation of land burial techniques to dispose of low level radioactive wastes and assessment of the level of containment at the two inactive sites where ocean disposal of radioactive wastes has taken place. Environmental standards for disposal of low level radioactive wastes using various methods will be developed from these studies.

The radiation surveillance function performed by EPA provides an independent assessment of the overall radiological quality of the environment. An air monitoring network of 22 continuously operating samplers measures

ambient radioactivity. This network is expanded to 67 sites when nuclear weapon testing is carried out above ground and radioactivity is widely distributed in the Northern hemisphere. Other specific air monitoring activities are carried on to measure plutonium, carbon-14 and krypton-85 radionuclides. Water analysis and sampling programs are carried on to measure levels of tritium and other radionuclides in surface water near specific sources of radioactive materials. Samples are also taken at 77 drinking water sites for comparison with EPA's regulations. Another aspect of radiation surveillance is the computation of population radiation exposure using data on specific radionuclides released from different sources. Special population studies are also conducted to determine the degree of exposure to non-ionizing radiation in major metropolitan areas.

NOISE

Noise is a pervasive form of pollution which is increasingly being regarded as an environmental stressor with possible adverse health effects. Noise induced hearing loss is a recognized problem particularly in highly mechanized industries and high noise exposure occupations. Excessive levels of noise appear to act as stressors which may pose the risk of increased susceptibility to disease and infection, notably heart disease and ulcers. An estimated 14.7 million workers are exposed to an 8 hour average sound level above 75 decibels, a level at which there is risk of hearing damage. An additional 13.5 million Americans are exposed to sound levels averaging above 75 decibels for 8 hours as operators of or passengers in transportation or recreation vehicles.

Noise is also a strong factor in degrading the quality of life. Since 1973 the Department of Housing and Urban Development, with support from the Census Bureau, has performed an Annual Housing Survey in an effort to determine the quality of housing in the United States. In this survey, noise has ranked consistently number one - three times as often as crime - as the most frequently mentioned undesirable condition in residential neighborhoods.

EPA has identified 55 decibels as the day-night sound level necessary to protect the general population against activity interference. Outdoor day-night sound levels above 55 decibels are likely to interfere with speech communication, sleep and relaxation. An estimated 103 million people live in areas where the decibel level exceeds 55.

The EPA noise pollution control program has several major objectives: (1) to reduce environmental (non-occupational) noise to a day-night sound level of 75 decibels as soon as possible. Attaining this goal will essentially eliminate the risk of hearing loss due to environmental noise and reduce extreme annoyance and activity interference, (2) as a longer term objective, to reduce environmental noise levels to day-night sound level of 55 decibels which would be most desirable to achieve health and welfare protection. An interim objective is to obtain a day-night sound level of 65 decibels.

EPA utilizes four major approaches to meet these objectives: (1) new product standards directed principally at surface transportation and construction noise sources, (2) in-use controls directed principally at

aviation, interstate motor carrier and railroad noise sources, (3) product labeling to provide protection against voluntary high level individual exposure, and (4) development of State and local programs to control noise.

EPA is in the process of promulgating or has already promulgated standards to reduce noise from newly produced portable air compressors, medium and heavy duty trucks, earth moving machinery, buses, truck mounted solid waste compactors, motorcycles, jackhammers and lawnmowers. As older equipment is replaced with products conforming with the standards, there will be a gradual reduction in environmental noise levels.

Other regulatory activity in the noise program centers around the development of labeling regulations which gives notice to prospective buyers of the level of noise the product emits or its effectiveness in reducing noise. Work is currently underway which will lead to the labeling of devices to protect hearing.

EPA also provides technical assistance to State and community noise control programs. Noise control at the State and local level is essential to complement Federal activities. Congress has identified the need for increased State and local programs in its 1978 amendment to the Noise Control Act of 1972, called the Quiet Communities Act. EPA will be carrying out a variety of programs under this new authority to stimulate State and local noise control activity.

Enforcement activities of noise standards and labeling requirements applicable to new products will be increasing as these regulations are

completed. The basic enforcement approach will be to verify that regulated products comply with standards when manufactured. Testing is done both by manufacturers and by EPA. A noise enforcement test facility has been established to test new products for which regulations are being developed.

TOXIC SUBSTANCES

In recent years a number of significant episodes of environmental contamination by toxic substances have occurred which posed substantially serious hazards to human health or to environmental quality. Chemicals found posing hazards include mercury, polychlorinated biphenyls (PCBs), and vinyl chloride; chemicals suspected of hazards include nitrilotriacetate (NTA), proposed for use in detergents but withheld from production in the U.S., and chlorofluorocarbons (trade name, Freon), which may threaten the stratosphere ozone layer.

In the past, each of these problems was dealt with on an ad hoc basis. No existing law provided authority to deal comprehensively with the problems associated with toxic materials until passage of the Toxics Substances Control Act, which became effective January 1, 1977. It gives EPA an important new tool for addressing toxic chemical problems.

Basically, the Act does three things: (1) it seeks to prevent pollution incidents through requirements for premarket testing, (2) it places the burden of proof of safety on the manufacturer or distributor of the chemical, and (3) it provides authority to control toxic chemicals not subject to existing laws. The basic new authorities include premarket

notification and premarket testing if required; direct regulation of chemicals, including possible controls on production, use, or disposal; the opportunity for a comprehensive assessment of hazards posed by a chemical; and extensive testing and record keeping authorities.

Under the Act, EPA may require testing of new or existing chemicals if they are suspected of presenting an unreasonable risk to health or the environment and if there are insufficient data to predict health or environmental effects. An interagency committee recommends the chemicals which EPA should give priority attention to testing. Members of the committee are from agencies dealing with health, safety and science such as the National Cancer Institute and the National Science Foundation. EPA must initiate testing requirements for any chemical substances listed by the committee within one year or publish reasons why not. A maximum of 50 chemicals may be listed by the committee at any time. EPA may require testing for chemical substances not recommended by the committee.

Ninety days before initiating production of the new chemicals, or manufacturing chemicals for significant new uses, manufacturers must notify EPA. The Agency will then determine if there is adequate information to evaluate the health and environmental effects of the chemicals. If the information is inadequate EPA may require a manufacturer to develop additional data before the chemical is approved for manufacture or distribution.

After considering the effects of a chemical on health, the environment, the benefits, the availability of substitutes, and the economic

consequences of regulating the chemical, a number of steps may be taken. If EPA finds a chemical to present an unreasonable risk of injury to health or the environment, the Agency may prohibit the manufacture or distribution of the chemical, limit the amount of the chemical that may be produced, regulate the use of a chemical, require the chemical to be labeled with warnings or instructions, and regulate the chemical's disposal. EPA may also require a chemical manufacturer to improve his quality control procedures if the manufacturing process causes a chemical to present an unreasonable risk to health or the environment. In the event that the immediate regulation of a chemical is necessary, EPA will publish in the Federal Register the action it proposes to take, be it initiation of a civil action for seizure of the chemical or article containing the substance, recall of the chemical, or public notification of the hazards of the chemical.

RESEARCH AND DEVELOPMENT

The EPA research and development program is designed to produce the scientific information and technical tools on which to base guidelines, standards, and strategies for controlling pollution. The major thrusts of the program are in air and water pollution research, with growing emphasis on the problem of toxic pollutants in all media. There are also significant programs dealing with such environmental problems as solid wastes, pesticides, non-ionizing radiation, and energy.

The research activities in each of these programs encompass the determination of the health and ecological effects of pollutants, the identification and characterization of pollutant sources, and the study

of transport, transformation, and ultimate disposition of pollutants in the environment. Improved methodologies for pollutant measurement and monitoring are being developed, as well as better technologies and processes for pollution control and resource recovery.

The air pollution research and development program is specifically designed to respond to the requirements of the Clean Air Act to protect public health and welfare from the adverse effects of air pollution. Health and ecological effects studies are conducted to provide criteria for establishing and revising air quality standards. For example, the potential health impact of diesel emissions are being assessed, along with the health and ecological effects of such air pollutants as sulfur oxides, oxone, and nitrogen oxides. Other work is directed at identifying the sources of airborne pollutants and the manner in which they are transformed and transported through the environment to man, including the development of models to provide estimates of pollution concentrations in the atmosphere. Research is conducted to understand the composition of pollutant emissions and to develop improved monitoring methods and associated quality assurance procedures. In addition, the control technology R&D program seeks to assess the capabilities of existing control approaches and to develop economical control technologies for major air pollution sources.

The water quality research and development program is designed to develop cost effective wastewater control and treatment technologies for municipalities and industries. Program activities also include the development of monitoring methods, methods for controlling accidental spills,

quality assurance techniques, and processing alternatives designed to avert pollution while conserving energy and natural resources. Strategies for the management of pollution from non-point sources, such as agricultural, mining, and construction activities are being developed. Emphasis is also being placed on determining the health and ecological effects of land disposal of sludges resulting from municipal wastewater treatment, recycling and reuse of industrial wastewater, assessing the ecology of shellfish-growing water, studying the health effects of recreational water use, and determining the ecological effects of ocean dumping.

The water supply research and development program is designed to provide scientific data on which to base drinking water standards, and develop new or improved technologies for effective and economical control of drinking water contaminants. Research efforts focus on detecting and identifying the existence of contaminants, determining the health effects of organic, inorganic, and microbiological matter in drinking water, and investigating the suitability of reusing treated municipal or industrial effluents as potable water. Epidemiological studies will be conducted for major organic pollutants so maximum contaminant levels can be established. Treatment techniques for the removal of particulates (including asbestos) are also being developed. New efforts are being directed at determining the nature and extent of groundwater contamination and, ultimately, developing protective measures.

Solid waste research emphasizes the assessment and development of technologies for managing hazardous wastes, as well as study of the transport process of hazardous materials into groundwater systems, and resource

conservation and recovery. The program involves the study of landfilling techniques, research on the treatment and disposal of hazardous waste, evaluation of remedial actions at pollution sites, and assessment of control technologies.

The pesticides research program emphasizes research on the health and ecological effects of pesticide use, and integrated pest management studies of selected ecosystems. The program studies the biological effects of pesticide exposure and conducts research on human exposure levels. Research on biological methods of pest control is also undertaken. In addition, methods for improving the quality assurance of pesticide research are being developed.

The toxic substances research program conducts studies to improve screening techniques used to predict deleterious health effects from exposure to chemical substances. The program also examines industrial processes that use or create toxic substances and evaluates alternative procedures. Other activities include the development of improved techniques for identifying and quantifying toxic substances in the environment, developing methodologies for understanding the movement of these substances through the environment and evaluating the impacts of these substances on the environment.

The radiation research program provides an information base for standard setting and regulatory actions, with a primary focus on the health effects of non-ionizing (microwave) radiation.

EPA also undertakes research of a longer term and more basic nature. This anticipatory research is being performed to identify emerging problems before serious crisis occur and to provide a base of knowledge in support of more applied research efforts.

The research and development program has responsibility for preparing Agency-wide guidelines for assessing the health risk of various pollutants and for reviewing completed assessments. For certain media, the Office of Research and Development performs the risk assessments itself and develops the scientific criteria used in regulatory decision making.

EPA's research and development effort includes a technical information program to communicate EPA's research findings to the environmental community.

EPA's energy program is also part of the Office of Research and Development, this program is described in the following section.

ENERGY

The EPA energy-related environmental research and development program is part of a national effort to increase domestic energy production. The purpose of the program is to avoid unnecessary delays in energy development without sacrificing environmental quality. Delays may be caused by either inadequate knowledge on the health and ecological effect of energy-related pollutants or the unavailability of control options. Most of the program focuses on environmental problems associated with the use of coal as a fuel, since coal is likely to be used much more in the future due to its domestic availability.

In FY 1979, EPA will spend \$111 million on this program. These funds will be spent on in-house research, grants to universities, contracts with private firms, and programs of other agencies. As the lead agency in the Interagency Energy and Environment Research and Development Program, EPA has responsibility for funding, coordinating, and overseeing the research activities of 17 other agencies.

The program is based upon the goals stated in the 1973 report entitled The Nation's Energy Future (often referred to as the Ray Report), and upon two 1974 interagency task force reports commissioned by the Office of Management and Budget and the Council on Environmental Quality to recommend how Federal research and development funds in energy and environment could be allocated most efficiently. Though the program is not authorized by a statute specifically geared at establishing an energy and environment research and development program, Sections of the Clean Air Act, of the Federal Water Pollution Control Act and the 1977 Department of Energy Act provide authorization for our energy activities.

EPA's energy program has both long-term and short-term focuses. In the long-term we are concentrating on new technologies which are likely to supplement or supplant existing technologies. In the short-term we are concentrating on existing, commercially available technologies.

Many new energy technologies with potentially adverse environmental impacts will not be available before 1985 or in commercial use before 1995. Given the substantial lead time for health and environmental effects assessment and control technology development, EPA is implementing research programs now to insure that energy development does not threaten

future environmental integrity. In coordination with the Department of Energy, the Department of Health, Education and Welfare, and 15 other agencies, EPA is working to identify the health and environmental effects of several advanced technologies. In addition, EPA and the Department of Energy are developing procedures for establishing environmental protection standards for new technologies.

The primary short-term goals of the energy program are: (1) to provide a sound data base necessary for the Agency to establish regulations and incentives to encourage the use of environmentally acceptable practices in extraction, processing and utilization of energy resources, and (2) to provide environmental control options, as soon as practicable, for those extraction, processing, and utilization practices which cause significant health or ecological damage.

The EPA energy research and development program is divided into two broad segments: health and ecological effects and control technology. The health and ecological effects program consists of the research activities associated with the behavior and effects of energy-related pollutants once they are in the environment. This segment of the energy program has four components--the effects of energy pollutants on organisms and ecosystems; transport and fate of energy-related pollutants in the environment; measurement systems and instrumentation development; and human health effects of energy-related pollutants. The majority of the health and ecological effects program is carried out by ten Federal agencies which receive passthrough funding from EPA. In FY 1979, for instance, \$36 million of the \$53 million available for the health and ecological effects program will go to the other agencies participating in the interagency program.

The second major segment of the energy research program, the control technology program, is designed to provide information on the types and quantities of pollutants released by energy supply activities and to develop or stimulate the development of control options where necessary. This technology research program is further divided into six components--fuel processing, preparation and advanced combustion, fuel extraction, environmental impacts of conventional and advanced energy systems, flue gas sulfur oxide control, nitrogen oxide control, and flue gas particulate control. Unlike the health and ecological effects program, very little of the control technology program is implemented by other agencies. Most of it is contracted out to private firms. In fact, during FY 1979, \$39 million of the \$58 million program will be contracted out.

AGENCY AND REGIONAL MANAGEMENT

Agency and Regional Management is funded by a separate appropriation which provides for the overall policy direction and administration of Agency programs as well as for certain common services and functions which can be most effectively managed on a centralized basis. For purposes of clarity it is useful to think of these activities as falling under two main headings: first, "management" and second, "support."

Management covers the salaries and related expenses of personnel involved in program direction or in the provision of management of administrative services and includes the following specific activities:

- * Agency management which covers the top level policy direction of all Agency programs provided by the Administrator and his

immediate staff and staff offices; the Agency-wide planning and management functions of the Office of Planning and Management; and the centralized administrative services provided to operations located in Washington, D.C., Research Triangle Park, N.C. and Cincinnati, Ohio.

- * Regional management which includes the direction of program operations by each of the 10 Regional Administrators and their immediate staff as well as the general management and administrative functions provided by the Management Division of each Region.

The support area does not involve personnel and consists mainly of house-keeping or common service items; these can be characterized as follows:

- * Agency support which covers the services required to support program operations at EPA Headquarters, Research Triangle Park, N.C., and Cincinnati, Ohio such as office services, printing, communication costs, utilities, guard and janitorial services, etc. Also included are certain Agency-wide services which are managed on a centralized basis including facilities rental, postal service, charges for the Federal Telecommunications Service, centralized ADP services, security clearances and the like.
- * Regional support which includes the support service requirements of the 10 Regional offices which are not covered by the Agency-wide services noted above, and covers items such as office services and supplies, communications, guard and janitorial services.

In EPA's budget these activities are discussed under the Agency and Regional Management appropriation. However, the estimates for that appropriation do not reflect the full amount of these costs. This is because the total amounts required for Agency and Regional support activities are allocated among the various EPA appropriations on a pro-rata basis so as to associate these quite significant costs with the various programs which benefit from them. The amounts allocated to the Abatement and Control, Research and Development, and Enforcement appropriations are included under a heading entitled "Program Support" which is common to each of these appropriations. The residual amounts allocated to the Agency and Regional Management appropriation are charged to headings under that appropriation entitled "Agency Support" and "Regional Support."

PROGRAM MANAGEMENT AND SUPPORT

Each of EPA's appropriations includes an activity entitled "Program Management and Support" which covers the direction and management of EPA's major line organizations--Air, Noise and Radiation; Water and Waste Management, Toxic Substances, Research and Development, and Enforcement as well as the "overhead" services required to support these organizations. Specifically it includes:

- * Program management which covers the program direction and administrative/management activities of the Assistant Administrator who direct EPA's major line organizations, their principal deputies, office directors, and supporting staffs. Also included are the management and supporting staff of the laboratories and other field installations which are under the management of

these major line organizations, as well as the Office of General Counsel and the legal staffs of the 10 Regional offices.

- * Program support - This includes general and technical support services required by certain of the laboratories and other field installations which are managed by EPA's major line organizations. It also includes a pro-rata share of the Agency-wide support costs which are allocated to the various EPA appropriations in the manner described in the previous section on Agency and Regional Management.

IV. EPA BUDGET

EPA APPROPRIATIONS STRUCTURE

EPA currently has seven individual appropriation accounts. The first five of the appropriations constitute the basic operating budget of the Agency; the latter two are exclusively for grants and overseas activities.

Abatement and Control - This appropriation includes the development of standards and regulations, grants and other assistance to States and localities, and monitoring of the status of pollutants in the environment.

Enforcement - The primary activity in this appropriation is the enforcement of Federal regulations, including compliance monitoring, water quality permit issuance and initiation of legal action against violators.

Research and Development - This appropriation includes research activities aimed at supporting the Agency's standard setting activities and development of new technology for the control of pollution.

Agency and Regional Management - This appropriation provides for basic central management and support activities, including overall program direction, progress assessment, program evaluation, finance, personnel, printing, facilities management, etc.

Buildings and Facilities - The design and construction of all new EPA owned facilities as well as repairs and improvements to Federally owned facilities is included in this appropriation.

Scientific Activities Overseas - This appropriation is used to purchase excess foreign currencies from the Treasury Department to finance cooperative environmental activities in countries such as Egypt, India and Pakistan.

Construction Grants - This appropriation finances grants to municipalities for the construction of wastewater treatment facilities. Obligational authority consists of both budget authority and contract authority. Appropriations to liquidate the contract authority are requested as needed.

The appropriations structure has been changing continuously since the Agency was established in 1970. Initially, the operating budget was included in a single appropriation, called Operations, Research and Facilities. This account was split into four pieces in FY 1973 - Research and Development, Abatement and Control, Enforcement, and Agency and Regional Management. Energy Research and Development was added in FY 1975 to cover work related to new energy programs and in FY 1977 combined with the Research and Development appropriation. The Buildings and Facilities appropriation, constructed from portions of each of the four operating budget appropriations, was also added in FY 1975. Scientific Activities Overseas and Construction Grants have been separate appropriations from the inception of the Agency.

Funds appropriated under the Enforcement and Agency and Regional Management appropriations must be obligated in one year. Funds appropriated under the Abatement and Control and Research and Development

appropriations are available for obligations for two years. Funds appropriated under the other appropriations are available until expended.

To provide flexibility between appropriations, Congress has approved language to permit the Agency to transfer up to seven percent of any appropriation except Construction to any other appropriation. This provision enables EPA to make small fund shifts required in day-to-day management without obtaining Appropriation Committee concurrence. Major shifts exceeding seven percent and minor shifts accumulating to more than seven percent are cleared with the committee.

In addition to the appropriation structure, EPA plans and budgets by "media," or major program areas. The media are:

Air	Noise
Water Quality	Interdisciplinary
Water Supply	Toxic Substances
Solid Waste	Energy
Pesticides	Program Management and Support
Radiation	Agency and Regional Management

Media programs cross appropriation lines. For example, Air programs are supported by funds from Abatement and Control, Enforcement and Research and Development.

Program strategies are generally developed along media lines rather than by appropriation. Consequently, it is generally easier to understand major programs on a media basis. In the interest of clarity, therefore, the EPA budget justification is organized by media. Program segments corresponding to the appropriation breaks are separately described within the total media section.

The Appropriations Committees have also placed controls on shifts between media. The Agency may add or subtract up to ten percent of the funds provided for any media. Changes of \$250,000 and greater require prior notification to the Committees.

EPA APPROPRIATION HISTORY
(in thousands of dollars)

	<u>FY 1974</u>	<u>FY 1975</u>	<u>FY 1976</u>	<u>FY 1977</u>	<u>FY 1978</u>	<u>FY 1979</u>	<u>FY 1980</u> <u>Estimate</u>
Research & Development	159,427	170,157	164,871	260,566	317,246	334,034	368,741
Abatement & Control	356,015	428,488	375,283	386,501	520,877	685,733	718,300
Enforcement	45,812	52,843	52,263	57,244	73,730	96,812	95,676
Agency & Regional Management	55,694	59,107	71,583	72,294	87,750	90,503	95,858
Energy, Research & Development ^{1/}	---	134,000	100,550	---	---	---	---
Buildings & Facilities	---	1,400	2,969	2,100	---	1,063	1,425
Subtotal	616,948	845,995	767,519	768,405	994,603	1,208,145	1,280,000
Scientific Activities Overseas	2,000	---	4,000	5,000	4,000	2,500	4,000
Construction Grants	<u>4,000,000</u>	<u>9,000,000</u>	<u>---</u>	<u>1,980,000</u>	<u>4,500,000</u>	<u>4,200,000</u>	<u>3,800,000</u>
Total	4,618,948	9,845,995	771,519	2,763,705	5,498,603	5,410,645	5,084,000 ^{2/}

^{1/} Research and Development and Energy Research and Development combined in FY 1977 and outyears.

^{2/} FY 1980 excludes \$3,238,000 for the U.S. Regulatory Council.

