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SUMMARIES OF FEDERAL ENVIRONMENTAL LAWS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY

by the
Environmental Protection Section
of the
Environment And Natural Resources Policy Division
With Contributions By The
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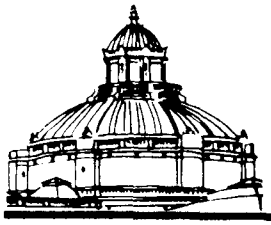

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ABSTRACT

These summaries of environmental laws administered by the Environmental Protection Agency are intended to supplement earlier CRS reports with concise descriptions of EPA's present authorities and responsibilities. Although many details or technical aspects are omitted, emphasis has been placed on conveying the essence of each statute, along with the overall strategy of pollution control, definitions of key terms, and the status of legislative authorizations.

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*/ House rules require enactment of an authorization before an appropriation bill can be considered, but this requirement can be waived--and frequently has been. Thus, while environmental statute authorizations have expired from time to time, programs have continued and have been funded.

INTRODUCTION

The authorities and responsibilities of the Environmental Protection Agency derive primarily from about 10 major statutes together with provisions from several other statutes. The origin of EPA and the evolution of the major statutes are described in a CRS report, "Environmental Protection: An Historical Review of the Legislation and Programs of the Environmental Protection Agency," March 1, 1983 [Report No. 83-34 ENR].

Such an historical approach has numerous advantages, and it provides insights into how Congress has developed and modified pollution control programs. But the format of that earlier report resulted in lengthy descriptions of superseded provisions which may obscure the picture of current authorities and responsibilities. This report is designed to supplement the earlier one by providing a concise picture of EPA's present authorities and responsibilities.

This report, then, consists of precis of EPA-administered statutes, with each chapter intended to be a discrete analysis. While these summaries present the essence of each statute, they are necessarily incomplete. Many details and secondary provisions are omitted, and even major components of some statutes are only sketched in. The 190-page Clean Air Act, for example, is summarized in 8 pages.

Moreover, this report describes the statutes without discussing actual implementation problems that may have occurred. For example, deadlines to control pollutant discharges and achieve particular statutory mandates have often been postponed as a result of delayed standard-setting by EPA.

Nevertheless, every effort has been made to convey the overall strategy of pollution control, and the major programs authorized by each act.

In short, while this report is not intended to contain the level of detail necessary for one to evaluate specific regulatory requirements, it does provide an overview of environmental programs, an introduction to how each Act is structured, definitions of key terms, and reviews of the current status of each act.

The chapters of this report were prepared in the Environment and Natural Resources Policy Division (ENR) under the direction of John Blodgett; with contributions by Maria Grimes, Claudia Copeland, Martin Lee, Donald Feliciano, Mark Reisch, Steve Hughes and John Blodgett, and with material contributed by Migdon Segal of the Science Policy Research Division, and with editing by Steve Hughes of ENR; and editorial production by Sharon Nixon, Office of Senior Specialists.

CLEAN AIR ACT

The Clean Air Act is Congress' response to deteriorating air quality resulting from the growth of America's industrialization as well as its dependence on the automobile. The Act is designed to limit and reverse the pollution of the ambient air through reductions of individual pollutants emitted by their sources. Initial versions of the Act in the early 1960s limited the Federal role largely to research and development and to assistance to the States that were still primarily responsible for pollution control programs. However, as knowledge about air pollution increased and air quality appeared to worsen, the Federal role was strengthened in a series of amendments. These amendments culminated in December 1970, when the Clean Air Act was enacted essentially in its present form (P.L. 91-604). The newly created Environmental Protection Agency (EPA) was authorized to carry out the provisions of the Act.

With the energy crisis of 1973-1974, the Act was amended by the Energy Supply and Environmental Coordination Act (ESECA) of 1974 (P.L. 93-319) in an effort to stimulate increased use of domestic fuels through temporary waivers of emission control requirements. Continued energy and economic concerns plus a number of implementation problems led to the Clean Air Act Amendments of 1977 (P.L. 95-95). None of these amendments changed the basic structure or the goals of the Act; neither did they permit any waiver of health-based air quality standards, though delays in attainment were allowed.

BACKGROUND

Strategically, the Clean Air Act is designed around health-based national ambient air quality standards. These are to be met through the application of control technology that will reduce emissions continuously and result in improved air quality. Costs and technological capability are subordinated to the requirement for protecting health. Moreover, these requirements are national, so that no facility should gain a competitive edge by having to meet less stringent controls in some areas.

The basic structure of the Clean Air Act is contained in the following provisions:

1. National Ambient Air Quality Standards (NAAQS), which set limits on pollution levels in ambient air;
2. National Emission Standards to control hazardous air pollutants (NESHAPS);
3. State Implementation Plans (SIPs), which contain the pollution cleanup program of each State;
4. New Source Performance Standards (NSPS), which impose technology-based control requirements on emissions from new stationary sources of pollution;
5. Statutory mobile source controls that restrict emissions from motor vehicles;
6. Prevention of Significant Deterioration (PSD), designed to prevent cleaner air in selected regions from deteriorating to the maximum (most polluted) levels allowed by the NAAQS; and
7. Limitations on new emissions in non-attainment areas--those where NAAQS are not being met--by utilizing ceilings or offsets.

1. National Ambient Air Quality Standards (Section 109)

The Act requires EPA to establish NAAQS for air pollutants that endanger public health and welfare and that are emitted into the air by numerous sources. EPA must set two levels of NAAQS: "Primary standards" set at levels necessary to protect human health; more stringent "secondary standards" set to protect welfare, which includes air pollution "effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well being."

EPA has promulgated NAAQS for seven major pollutants: sulfur oxides (SOx), suspended particulate matter (TSP), nitrogen oxides (NOx), carbon monoxide (CO), photochemical oxidants (measured as ozone), hydrocarbons (HC), and lead (Pb). These are often called "criteria pollutants" because their standards are based on "criteria documents" prepared by EPA. Except for lead, which was listed more recently, the enforcement deadline for attaining the NAAQS for the criteria pollutants was December 31, 1982. Urban areas with severe oxidant and carbon monoxide problems may receive an extension to December 31, 1987, provided they take certain extra steps to control the sources of these pollutants.

EPA was to have reviewed the information on which current NAAQS are based by the end of 1980, and every 5 years thereafter; the reviews are not yet completed, however. Also, EPA has statutory mandates to study several unregulated pollutants for possible control, including cadmium and polycyclic organic matter (POM), one of several volatile organic compounds.

2. Hazardous Air Pollutants (Section 112)

The 1970 CAA requires EPA to develop a listing of air pollutants whose emissions are likely to result in an increase in mortality or serious

irreversible illness and, once listed, propose standards to regulate such emissions. Congress and other groups have been concerned about EPA's slowness in implementing these provisions. Since 1970, the agency has listed 7 substances*/ as hazardous and established emission standards for the first four of them. Between 1977 and 1982, EPA identified another 37 substances as candidates for the listing, but has not approved inclusion on the list nor proposed emission standards for any of them.

3. State Implementation Plans (SIPs) (Section 110)

While the Act authorizes the Federal EPA to set NAAQS, it delegates to the States the responsibility to establish the procedures by which the NAAQS will be met and enforced. EPA must approve the plans to ensure that they are adequate to meet the statutory requirements. The United States has been divided into 247 air quality control (AQCRs) regions, and each State is responsible for achieving the NAAQS in the air quality regions within its jurisdiction.

SIPs are developed by assessing emissions in air quality regions and computing by mathematical modeling whether those emissions will result in air quality in violation of applicable air quality standards; to the extent standards would be exceeded, the State imposes controls on sources to reduce the excess emissions. The Act now prohibits the use of techniques which disperse rather than reduce emissions--such as very tall stacks--except in special, very limited circumstances and on an interim basis only. It also prohibits intermittent rather than continuous control methods. Proposed new and modified sources must obtain State construction permits for which the applicant shows how the anticipated emissions will not exceed allowable limits.

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*/ Mercury, beryllium, asbestos, vinyl chloride, benzene, radionuclides, inorganic arsenic.

Following the 1977 Amendments, each State by July 1979 was to incorporate as to nonattainment areas new requirements and the new deadlines for achieving NAAQS into its SIP. All States have submitted revised, partial, or complete plans and many have been approved by EPA. If EPA finds it cannot approve a SIP and the attainment deadline is exceeded, then it must impose a construction ban on new major sources of the pollutant in question. EPA's authority to impose such sanctions has been upheld by the courts, and the agency has imposed construction bans on 49 States in mid-1979. EPA has also withheld funds from 3 States temporarily for failure to invoke "reasonable efforts" to comply.

4. New Source Performance Standards (NSPS) (Section 111)

These standards are to ensure that new industrial facilities comply with uniform Federal standards. Applying to certain categories of stationary sources that are major polluters (for example, powerplants, steel mills, smelters), NSPS set maximum emissions for new or extensively modified facilities in these categories, with the emission levels determined by the best "adequately demonstrated" continuous control technology available, taking costs into account. EPA must regularly revise and update NSPS applicable to designated sources as new technology becomes available, since the goal of using them is to prevent new pollution problems from developing and to force the installation of new control technology.

5. Emission Controls for Mobile Sources (Title II)

Since 1965, the CAA has established emission standards for automobiles and light trucks; most other mobile sources have been regulated subsequently. These Federal standards preempt State auto emission standards, except for California, which is permitted to request a waiver annually to allow stricter standards. EPA conducts a testing and certification program to ensure that new model vehicles--including imports--meet the standards.

The 1970 Act required that emissions of carbon monoxide and hydrocarbons be reduced by 90% by 1975 and emissions of nitrogen oxides be reduced by 90% by 1976 from the emissions allowed in 1970. The 1974 amendments delayed the deadlines and set interim standards. The 1977 Amendments further delayed the deadlines, to 1982 for CO and HC, and to 1985 for NOx; also, the emission reduction for NOx was reduced to 75%, with the 90% reduction set as a research goal.

To reduce pollution further, the CAA also requires EPA to control fuels and fuel additives which are used in mobile sources. Under this authority, EPA has been phasing out the use of lead as an octane-booster because of its health hazards, while at the same time prohibiting its use in cars with catalytic converters, which are "poisoned" by the lead.

6. Prevention of Significant Deterioration (PSD) (Title I, Part C)

Prevention of Significant Deterioration is the policy that existing levels of air quality higher than required by NAAQS should be protected against significant degradation. It means that sources in "clean air" regions do not have any "right" to pollute the clean air increment even if the NAAQS would not be violated. Such sources must install required emission control technology that may be stricter than that required by NSPS. The justifications of the policy are that it protects air quality, maintains clean air increments for future development, and prevents firms from gaining a competitive edge by "shopping" for "clean air" to pollute. Implicit in the 1970 Act--as interpreted by the courts--PSD was made explicit by the 1977 Amendments; and PSD requirements must be a part of all SIPs. At present, PSD requirements apply only to particulates and sulfur oxides, but will be extended to other pollutants in a second set of regulations. EPA has proposed but not yet finalized these.

The Act now regulates PSD by requiring clean air areas to be designated in three classes with specified increments of pollution allowed to be emitted in each. These increments range from very little in Class I areas--statutorily these include large national parks and wilderness areas--through modest increases in Class II areas (nearly all other regions) to essentially the level of minimum (NAAQS) standards in Class III areas (more industrialized areas). Procedures involving EPA concurrence are established for re-classifying areas other than those statutorily designated as Class I. New and modified sources in PSD areas must install Best Available Control Technology (BACT).

As part of the PSD requirements, the Act provides for visibility protection in mandatory Class I areas. EPA must list mandatory Federal Class I areas where visibility is important and identify emission sources which impair visibility. States must then include in SIPs emission limitations based on best available retrofit technology for these sources.

7. Nonattainment Areas (Title I, Part D)

Nonattainment areas are regions which have failed to meet NAAQS for one or more pollutants. In the view of some, the 1970 Act prohibited the construction of new facilities in nonattainment areas after the statutory 1975 deadline for achieving NAAQS. Most heavily industrialized and densely populated areas of the country failed to meet the deadline, however--many, in fact, still have not achieved it. If industrial expansion continued to be prohibited in these regions, they were likely to suffer economic and social hardships. Since no statutory provisions were available to mitigate this prohibition, the EPA established an "offset policy" as an interim measure. Under this policy, a preconstruction review was required in nonattainment areas, and new or modified sources would be permitted if their emissions would be more than offset by emission reductions from existing sources in the area.

The net total emissions of the new source together with the reduced emissions of existing sources must contribute to reasonable progress toward attainment of NAAQS. Thus, the policy permitted the opportunity for new construction in nonattainment areas, while ensuring that progress toward the achievement of clean air would continue.

The 1977 CAA Amendments incorporated the "offset" strategy and defined the conditions for permitting new construction. These conditions include: a State permit system for all new or modified sources; offsets that ensure "reasonable further progress" toward attainment; installation of equipment to obtain the Lowest Achievable Emission Rate (LAER) by new and expanded facilities and reasonably available control technology (RACT) to retrofit existing plants; additional mobile source control measures and improved public transportation in areas which cannot attain oxidant and carbon monoxide standards by 1982. States which fail to institute such measures, especially mandatory inspection/ maintenance programs for auto emission controls, would face sanctions of a construction ban, losing CAA grants and certain Federal highway construction funds, or, at EPA's discretion, sewage treatment construction grants for plants that would contribute to the nonattainment problem. In 1983, EPA limited imposition of sanctions to areas not acting in good faith to comply. The agency also decided not to ban new construction in nonattainment areas with fully approved remedial plans.

The 1977 Amendments (Section 323) also established the National Commission on Air Quality to report to Congress on the effectiveness of the programs of the CAA. The Commission submitted its final report, "To Breathe Clean Air", to Congress on March 2, 1981. Several of this report's recommendations have been incorporated in various legislation pending before the 98th Congress.

CLEAN WATER ACT

The principal law governing pollution in the Nation's waterways is the Federal Water Pollution Control Act, or Clean Water Act. Originally enacted in 1948 (P.L. 80-845), amendments in 1972 (P.L. 92-500) totally revised the Act, giving it its current shape and spelling out ambitious programs for water quality improvement new being put in place by industries and municipalities. Congress made certain fine-tuning amendments in 1977 (P.L. 95-217) and again reauthorized and revised portions of the law in 1981 (P.L. 97-117).

OVERVIEW

The Clean Water Act establishes as its objective the restoration and maintenance of the "chemical, physical, and biological integrity of the Nation's waters." Two goals also are established: zero discharge of pollutants by 1985 and, as an interim goal and where possible, water quality that is both "fishable" and "swimmable" by mid-1983.

The Act could be said to consist of two major parts, one being the Title II provisions which authorize a Federal grant program to assist municipalities in constructing sewage treatment plants. The other major part is regulatory requirements, found throughout the Act, that apply to industrial and municipal dischargers.

The Act has been termed a technology-forcing statute because of the rigorous demands placed on those who are regulated by it to achieve higher and higher levels of pollution abatement. Industries were given until July 1, 1977, to install "best practicable control technology" (BPT) to

clean up waste discharges. Municipal wastewater treatment plants were required to meet an equivalent goal, termed "secondary treatment," by that date. (Municipalities unable to achieve secondary treatment by that date may apply for case-by-case extensions up to July 1, 1988.) Cities that discharge wastes into marine waters are eligible for case-by-case waivers of the secondary treatment requirement, where sufficient showing can be made that natural factors provide significant elimination of traditional forms of pollution.

The Clean Water Act requires greater pollutant cleanup by mid-1984, generally demanding use by industry of "best available technology" (BAT) economically achievable. Time extensions up to mid-1987 are available for industrial sources utilizing innovative or alternative technology. No time extensions are allowed for treatment of toxic pollutants, however. Failure to meet statutory deadlines could lead to enforcement action.

Under this Act, Federal jurisdiction is broad, particularly regarding establishment of national standards or effluent limitations. The Environmental Protection Agency (EPA) issues regulations containing the BPT and BAT effluent limitations applicable to categories of industrial sources (such as iron and steel manufacturing, organic chemical manufacturing, petroleum refining, and others). Certain responsibilities are delegated to the States, and this Act, like other environmental laws, embodies a philosophy of Federal-State partnership in which the national government sets the agenda and standards for pollution abatement and States carry out day-to-day activities of implementation and enforcement. Delegated responsibilities under the Act include authority for qualified States to issue discharge permits to industries and municipalities and to certify and administer portions of the construction grants program. (As of December 1983, 34 States plus the

Virgin Islands had been delegated the permit program, and 45 States plus Puerto Rico had obtained authority to manage portions of the municipal construction grants programs.)

In addition, States are responsible for establishing water quality standards, consisting of a designated use (recreation, water supply, industrial, or other), plus a numerical or narrative statement of the concentrations of various constituents necessary to support the designated use. These standards serve as the backup to federally set technology-based requirements, by indicating where additional pollutant controls are needed to achieve the overall goals of the Act.

Programs in the Clean Water Act are primarily directed at point source pollution, that is, wastes discharged from discrete and identifiable sources, such as pipes and outfalls. In contrast, little attention has been given to nonpoint source pollution (stormwater runoff from agricultural, forestry, and urban areas), despite estimates that it may represent 50 percent of the Nation's water pollution problem. The 1972 amendments authorized a grant program to enable States and regional agencies to develop plans for controlling nonpoint sources, and all responsibility to regulate this diverse type of pollution problem was given to States, not the Federal Government. However, EPA performs and supports research and issues guidance on control methods.

While the Act imposes great technological demands, it also recognizes the need for comprehensive research on water quality problems. This is provided throughout the statute, on topics including pollution in the Great Lakes, in-place toxic pollutants in harbors and navigable waterways, and water pollution resulting from mine drainage. The Act also provides

support for training personnel to operate and maintain wastewater treatment facilities.

TITLE II--CONSTRUCTION GRANTS PROGRAM

Federal law has authorized grants for planning, design, and construction of municipal sewage treatment facilities since 1956 (P.L. 84-660). This grants program was greatly expanded in 1972. Since that time Congress has authorized $49 billion and appropriated $38 billion for grants to aid wastewater treatment plant construction. Grants are allocated among the States according to a complex statutory formula that combines two factors: State population and an estimate of municipal sewage treatment funding needs derived from a biennial survey conducted by EPA and the States. The most recent estimate, completed in 1982, indicates that $118 billion is needed to construct municipal wastewater treatment plants in the United States.

Federal grants are made for types of projects (such as secondary or more stringent treatment and associated sewers) based on a priority list established by the States. From fiscal year 1972 through fiscal year 1984, grants have been available for up to 75 percent of total project costs, or up to 85 percent where innovative or alternative technology is used, such as reclaiming or recycling of water. Beginning in fiscal year 1985, the Federal share of costs for new projects will be 55 percent. The funding bonus for innovative or alternative projects will continue, however, allowing up to 75 percent Federal funding. States are responsible for the non-Federal share of project costs.

Over time, critics have argued that the construction grants program had become a massive public works program, rather than one focused on improving water quality. In part to counter this charge, Congress amended the law in 1981 to limit Federal funding to types of projects that would meet the goals

of the Act. Thus, beginning in fiscal year 1985, projects such as construction of new collector sewers or rehabilitation of existing sewer lines, which may not be closely related to water quality, will not be grant-eligible, although they previously were. (However, Governors have the discretion to use up to 20 percent of a State's annual allotment for such projects.)

PERMITS, REGULATIONS, AND ENFORCEMENT

To achieve its objective, the Act embodies the concept that all discharges into the Nation's waters are unlawful, unless specifically authorized by a permit. Thus, existing and new industrial and municipal dischargers must apply to EPA (or qualified States) for permits under the Act's National Pollutant Discharge Elimination System (NPDES) program. An NPDES permit requires the discharger (source) to attain technology-based effluent limits (BPT or BAT for industry, secondary treatment for municipalities, or more stringent water quality protection). The permit also requires the source to maintain records and to carry out effluent monitoring activities. Permits are issued for five-year periods and must be re-issued thereafter.

The NPDES permit incorporates numerical effluent limitations issued by EPA. The BPT limitations focused on regulating discharges of so-called conventional pollutants, such as bacteria and oxygen-demanding materials. The BAT limitations emphasize controlling toxic pollutants--heavy metals, pesticides, and organic chemical compounds. Under provisions of a 1976 consent decree which Congress ratified in amendments in 1977, EPA issues effluent limitations for 65 named classes or categories of toxic pollutants, or "priority pollutants," actually representing 129 specific chemical substances. In addition to these limitations applicable to categories of industry, EPA issues water quality criteria for the priority pollutants. The criteria recommend ambient, or overall, concentration levels for the

same pollutants and provide guidance to States for establishing water quality standards that will achieve the goals of the Act.

A separate type of permit is required to undertake dredging or filling activities in the Nation's waters. Authorized by section 404 of the Act, this permit program is administered by the U.S. Army Corps of Engineers subject to, and using EPA's environmental guidance. Certain types of activities are exempt from permit requirements, including normal farming, ranching, and forestry practices; some construction and maintenance; and activities already regulated by States under other provisions of the Act. EPA may delegate certain section 404 permitting responsibility to qualified States.

Other regulations issued by EPA under the Act include guidelines on disposing of sewage sludge and guidelines for limiting discharge of pollutants into the ocean. EPA also provides guidance on technologies that will achieve BPT, BAT, and other limitations.

The NPDES permit, containing effluent limitations of what may be discharged by a source, is the Act's principal enforcement tool. EPA may issue a compliance order or bring a civil suit in U.S. district court against persons who violate the terms of an NPDES permit or one issued under section 404. The penalty for such a violation is up to $10,000 per day. A stiffer penalty of up to $25,000 per day or one-year imprisonment is authorized for criminal violations of the Act--for willful or negligent violations.

In addition, individuals may bring a civil action in U.S. district court against persons who violate a prescribed effluent limitation. Individuals also may bring suit against the Administrator of EPA for failure to carry out a non-discretionary duty under the law.

THE OCEAN DUMPING ACT

INTRODUCTION

The 1972 Ocean Dumping Act, the first two titles of the Marine Protection Research and Sanctuaries Act (P.L. 92-532), has two basic aims: to regulate intentional ocean dumping, and to authorize related research. The third title, not addressed here, authorizes the establishment of marine sanctuaries.

The Act's basic provisions have remained virtually unchanged since 1972, but some new authorities have been added. These include (1) new research responsibilities for EPA; (2) specifically directing EPA to reduce or phase out the disposal of "harmful" sewage sludges and industrial wastes; and (3) including Long Island Sound within the purview of the Act.

Four Federal agencies have responsibilities under the Ocean Dumping Act: The Environmental Protection Agency, Corps of Engineers, National Oceanic and Atmospheric Administration, and Coast Guard. EPA has primary authority for regulating ocean disposal of all substances except dredged spoils, which are under the authority of the Corps of Engineers. Long-range research on the effects of man-induced changes to the marine environment is charged to the National Oceanic and Atmospheric Administration, while EPA is authorized to carry out research and demonstration activities related to phasing out sewage sludge and industrial waste dumping. Under the Act, the Coast Guard is charged with maintaining surveillance of ocean dumping.

REGULATING OCEAN DUMPING

Title I of the Act prohibits all ocean dumping, except that allowed by permits, in any ocean waters under U.S. jurisdiction, by any vessel registered by the U.S., or by any vessel sailing from U.S. ports. The Act absolutely bans any dumping of radiological, chemical, or biological warfare agents or any high-level radioactive waste. Permits for dumping any other materials, except dredge spoils, can be issued by the EPA "after notice and opportunity for public hearings ...where the Administrator determines that such dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities." The EPA shall designate sites for dumping. Further amendments (P.L. 95-153/P.L. 96-225) specifically required that dumping of municipal sewage sludge or industrial wastes which unreasonably degrade the environment be phased out by December 1981. Recent amendments (P.L. 97-424) placed a two-year moratorium on the disposal of nuclear materials in the ocean.

The Corps of Engineers issues permits for dumping dredged material. Permits are to be based on the same criteria utilized by EPA, and to the extent possible, EPA-recommended dumping sites shall be used. Where the only feasible disposition of dredged material would violate the dumping criteria, the Corps can request an EPA waiver.

The permits issued under the Act specify the type of material to be dumped, the amount to be transported for dumping, the location of the dumping, the length of time for which the permits are valid, and special provisions for surveillance. The Administrator can require an applicant for a permit to provide such information as he may consider necessary to review and evaluate the application.

The Act provides for civil penalties of not more than $50,000 for each violation to be assessed by the Administrator, taking into account such factors as gravity of the violation, prior violations, and demonstrations of good faith; no penalty shall be assessed until after notice and opportunity for a hearing. In addition, any person who violates a requirement of title I of the Act, regulations issued under it, or the conditions of an ocean dumping permit, shall be fined not more than $50,000 or imprisoned more than one year. The Coast Guard is directed to conduct surveillance and other appropriate enforcement activity to prevent unlawful transportation of material for dumping, or unlawful dumping.

The Act voids any other regulation of ocean dumping. The Clean Water Act and the Ocean Dumping Act overlap with respect to vessels discharging into territorial seas, but any question of conflict is essentially moot because EPA has promulgated a uniform set of standards (40 CFR Parts 220-229, 38 Fed. Reg. 28610 (1973). States are prohibited from regulating ocean dumping.

The Act also requires the Administrator, to the extent possible, to apply the standards and criteria binding upon the U.S. by the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. This convention, signed in London by 80 countries in November 1972, included Annexes prohibiting the dumping of mercury and cadmium and their substances, organohalogen substances including DDT and PCBs, persistent plastics, oil, high level radioactive wastes, and chemical and biological warfare agents; and requiring special permits for other heavy metals, cyanides and fluorides, and medium and low-level radioactive wastes. The Senate ratified the convention on August 3, 1973.

RESEARCH ON OCEAN DUMPING

The second title, as amended, authorizes two types of research: general research on ocean resources, under the jurisdiction of the National Oceanic and Atmospheric Administration; and research related to phasing out ocean disposal activities, concluded by the Environmental Protection Agency.

The Ocean Dumping Act directs the National Oceanic and Atmospheric Administration to carry out a comprehensive and long-term research program on the effects not only of ocean dumping, but also pollution, overfishing, and other man-induced changes of the ecosystem. Additionally, NOAA is to assess damages from spills of petroleum and petroleum products.

The research role of the EPA includes "research, investigations, experiments, training, demonstrations, surveys, and studies" to minimize or end the dumping of sewage sludge and of industrial wastes, and to investigate alternatives available. The 1980 amendments also required EPA to study technological options for removing heavy metals and other organic materials from New York City sewage.

SAFE DRINKING WATER ACT

This chapter briefly describes the Federal regulations of public drinking water supplies as implemented under the Safe Drinking Water Act.

The Safe Drinking Water Act (P.L. 93-523), enacted on December 16, 1974, is the basis for protecting public drinking water systems. The major part of the Act is an amendment to the Public Health Service Act, adding Title XIV, Safety of Public Water Systems. Basically, the Act directs the Administrator of EPA to prescribe regulations for national drinking water standards to protect the public health, permits States to enforce the requirements, provides for protection of underground sources of drinking water, and establishes a system for emergency allocation of chemicals necessary for water purification.

DRINKING WATER STANDARDS

In promulgating drinking water standards (Section 1412), EPA had to accomplish three tasks. First, the Administrator was directed to issue national interim primary drinking water regulations, which are designed to protect health to the extent feasible, taking technology, treatment techniques, and costs into consideration. The interim regulations became effective within 18 months of their promulgation.

Second, in the meantime, EPA was to contract with the National Academy of Sciences (NAS) for a study of the maximum contaminant levels (MCLs) of pollutants necessary to protect public health. Based on this report, entitled "Drinking Water and Health" (volume 1 was published in 1977; four more volumes have been issued since), the Administrator proposed revised primary

drinking water standards, followed thus far by final revised standards (for 22 individual contaminants)--each of which took effect 18 months after their promulgation.

Third, the Administrator was required to issue secondary drinking water regulations, which specify the maximum contaminant levels necessary to protect public welfare, and deal primarily with contaminants affecting odor and appearance of drinking water. These standards are not federally enforceable and are issued as guidelines to the States.

The primary enforcement responsibility for public water regulation lies with the States, provided they adopt standards as stringent as the national standards, adopt adequate procedures for enforcement, maintain records, and adopt a plan for providing emergency water supplies (Section 1413). Whenever the Administrator finds that a public water system in a State that has primary enforcement authority does not comply with regulations, he must request the State to report the steps being taken to ensure compliance; if the State fails to comply within 2 months, the Administrator is authorized to commence a civil action (Section 1414). He may conduct public hearings on ways to bring the system into compliance with the regulations, and he shall issue appropriate recommendations to the State and public water system. In States that do not have primary enforcement authority because they fail to adopt appropriate standards and procedure, the Administrator is authorized to act as the primary enforcement authority. (The vast majority of States have primacy authority, although a March 1982 report by the General Accounting Office found that many of them were not complying with the drinking water regulations.)

The Act provides for variances if the quality of the raw water precludes meeting the standards despite application of the best technology (Section 1415). It also provides for exemptions if the standards cannot be met for

other compelling reasons (including costs) and if the system was in operation before the effective date of the treatment requirements (Section 1416). A variance or exemption can be issued only if it will not result in an unreasonable health risk. It can be issued by States with primary enforcement responsibilities, or by the EPA for States without. In either case, an application would have to spell out a procedure and schedule for bringing the system into compliance.

UNDERGROUND INJECTION CONTROL

Another provision of the Act required the Administrator to promulgate regulations for State underground injection control programs to protect underground sources of drinking water. These regulations were to contain minimum requirements for the underground injection of wastes that would not present a hazard to underground sources of drinking water and to require that a State prohibit, effective 3 years after enactment, any underground injection that is not authorized by a permit issued by a State (Section 1421). However, the regulations cannot interfere with the underground injection of brine from oil and gas production or secondary or tertiary recovery of oil unless the underground sources would be affected by injection. Within 180 days of enactment, the Administrator was required to publish a list of States for which an underground injection control program may be necessary to protect drinking water supplies (Section 1422). Within 270 days of issuance of the regulations by EPA, the States were to provide evidence of a procedure to implement an underground injection control program. The Administrator was required to approve or disapprove (in whole or in part) the State plans within 3 months; in the case of approval, the States will assume primary responsibility for enforcement. If the Administrator disapproves a State's plans, or the State chooses not to assume program responsibility, EPA must implement the program (Section

1423). In areas that overlie a sole source potable aquifer, the Administrator may prohibit new underground injection wells or disallow any Federal funding for projects that may threaten these aquifers. For oil and gas injection operations only, States are delegated primary enforcement authority (when they have existing programs for control) without having to meet EPA regulations (Section 1425).

The Administrator has emergency power to issue orders and commence civil actions if a contaminant likely to enter a public drinking water supply system poses a substantial threat to public health and State or local officials have not taken adequate action (Section 1431).

If a chemical necessary for water treatment is not reasonably available, the Administrator can issue a "certification of need," in which case the President can order an allocation of the chemical to those needing it (Section 1441).

The Administrator is provided authority to conduct research, studies, and demonstrations relating to the causes, treatment, control, and prevention of diseases relating to the contamination of water (Section 1442). Also, he is directed to provide technical assistance to the States and municipalities in establishing and administering their public water system regulatory responsibilities.

The Administrator can make grants (75 percent of estimated costs) to States to carry out public water system supervision programs, provided the State will have established a supervision program and will have assumed primary enforcement authority within a year of the grant (Section 1443). And he can make grants to carry out underground water resource protection programs if the State will have established an underground source protection system and assumed primary enforcement authority within 2 years of the grant.

The Administrator may also make grants to develop and demonstrate new technologies for providing safe drinking water and to investigate health implications involved in the reclamation and reuse of waste waters (Section 1444). In addition, under certain conditions, the Administrator is required to guarantee loans by private lenders to small public water suppliers to enable the systems to meet national primary drinking water standards.

Also, suppliers of water who may be subject to regulations under the Act are required to establish and maintain records, monitor, and provide any information that the Administrator requires to carry out the requirements of the Act (Section 1445). The Administrator may also enter and inspect the property of water suppliers to enable him to carry out the purposes of the Act. Failure to comply with these provisions may result in criminal penalties.

The Act established a National Drinking Water Water Advisory Council, composed of 15 members, to advise, consult, and make recommendations to the Administrator on activities and policies derived from the Act (Section 1446).

Any Federal agency having jurisdiction over federally owned and maintained public water systems must comply with all national primary drinking water regulations as well as any underground control program (Section 1447). The Act provides for waivers in the interest of national security.

Procedures for judicial review are spelled out (Section 1448), and provision for citizens' civil actions is made (Section 1449). Citizen suits may be brought against any person or agency allegedly in violation of provisions of the Act, or against the Administrator for alleged failure to perform any action or duty which is not discretionary.

A survey of rural drinking water supplies was mandated (under Section 3 of the Public Health Service Act) to be contracted by the Administrator to

study the quantity, quality, and availability of rural drinking water supplies and to prepare a report within 2 years of enactment of the Act.

Finally, the Act includes a provision amending the Food, Drug, and Cosmetic Act, authorizing the Secretary of Health and Human Services (HHS) to regulate bottled drinking water. The Secretary is to consult with the Administrator of EPA in drafting the regulations.

The Safe Drinking Water Act has been amended three times since the original P.L. 93-523: (1) in November 1977 by P.L. 95-190; (2) in September 1979 by P.L. 96-63; and (3) in December 1980 by P.L. 96-502.

THE RESOURCE CONSERVATION AND RECOVERY ACT

Federal solid waste law has gone through three major phases. The Solid Waste Disposal Act, passed in 1965 (Title II of the Clean Air Act of 1965, P.L. 89-272), focused primarily on disposal. It authorized research, demonstrations and training, and provided for sharing with the States the costs of making surveys of waste disposal practices and problems, and developing plans. The Resource Recovery Act of 1970 (P.L. 91-512) changed the whole tone of the legislation from efficiency of disposal, to reflect concern with the reclamation of energy and materials from solid waste. It authorized grants for demonstrating new resource recovery technology, and required annual reports from the Environmental Protection Agency (EPA) on means of promoting recycling and reducing the generation of waste.

A more active, preventive role was embodied in the Resource Conservation and Recovery Act (RCRA), signed by President Ford on October 21, 1976, which instituted the first Federal regulatory function in the field by creating a permit program for hazardous wastes, and prohibiting open dumps. Subtitle C of RCRA creates the hazardous waste management program. A waste is hazardous if it is ignitable, corrosive, reactive, or toxic, or appears on a list of 85 industrial process waste streams and 416 discarded commercial products and chemicals. The 1976 law expanded the definition of "solid wastes" to include "sludge . . ., and other discarded material, including solid, liquid, semi-sold, or contained gaseous material." Specifically excluded are irrigation return flows, industrial plant source discharges, and nuclear material covered by the Atomic Energy Act. The broadened definition is particularly

important with regard to hazardous wastes, at least 95 percent of which are liquids or sludges. A manifest system, effective since 1980, is used to track such wastes from their point of generation, along their transportation routes, to the place of final treatment, storage, or disposal. (Separate authority for the clean-up of abandoned waste sites is discussed in the later chapter on "Superfund.")

Under RCRA, the generators of the waste must comply with regulations concerning recordkeeping and reporting; the labelling of wastes; the use of appropriate containers; providing information on the wastes' general chemical composition to the transporters, treaters, and disposers; and the use of the manifest system. Facilities generating less than 1,000 kilograms per month are generally exempted from the regulations; amendments to RCRA being considered by Congress in 1984 are expected to lower that exemption, probably to 100 kilograms per month.

Transporters of hazardous waste must also meet certain standards. These regulations were coordinated by EPA with existing regulations of the Department of Transportation. Treatment, storage, and disposal facilities are required to have permits, to comply with operating standards, to meet financial requirements in case of accidents, and to close down their facilities in accordance with EPA regulations.

States are encouraged and financially assisted to take over the hazardous waste program, which went into effect November 19, 1980, from EPA. Two phases of interim authorization for State programs began in 1981, with the first phase permitting a State to oversee generator and transporter standards, manifest requirements, and some other matters. Phase II authorization is broken down into three parts: part A lets States issue permits for storage tanks, con-

tainers, and waste piles; part B grants authority to permit incinerators; and part C covers land disposal facilities.

All the States except Wyoming are assisting EPA in implementing RCRA under agreements called Cooperative Arrangements. The Cooperative Arrangements enable the States to participate in the program (e.g., assisting in permit evaluation or operating the manifest system) and gain experience, as well as to receive financial assistance in developing their programs while working towards achievement of full authorization. (Wyoming has declined to participate in the hazardous waste management program because of budgetary problems, requiring EPA to undertake all activities in that State.)

Criminal violations of subtitle C's hazardous waste provisions are punishable by $50,000 fines and 2 years imprisonment; knowingly endangering human life brings fines of $250,000 ($1 million for a company) and 5 years imprisonment. An inventory of hazardous waste disposal sites is to be undertaken to aid implementation and enforcement.

Financial and technical assistance was earlier available under subtitle D of RCRA to assist States in developing their own comprehensive plans for solid waste management, resource conservation, and resource recovery. Open dumps are outlawed; they must be closed or upgraded to sanitary landfills by September 13, 1984. Technical assistance teams from EPA provided free technical, marketing, financial, and institutional assistance. Help was also authorized for States and localities for projects recovering energy and materials from solid waste, to aid localities having dumps located over drinking water supplies, and to assist small rural communities. The modest financial and technical assistance provided by subtitle D ended in fiscal year 1981 as part of overall budget cutbacks.

The Environmental Protection Agency is the lead agency under RCRA, which also created an Office of Solid Waste within EPA, headed by an Assistant Administrator. The Department of Commerce is given several duties to encourage greater commercialization of resource recovery technology. All Federal agencies, including the legislative branch, are subject to the law and its regulations.

Broad research, development, and demonstration authorities are contained in subtitle H of RCRA. A series of special studies, and information transfer activities are called for, although the latter have also been eliminated for budgetary reasons.

RCRA has been amended twice. Noncontroversial additions clarifying certain sections of the law and correcting clerical errors in the text were attached as floor amendments to the Quiet Communities Act of 1978 (P.L. 95-609, November 8, 1978). The Solid Waste Disposal Act Amendments of 1980 (P.L. 96-482, October 21, 1980) were somewhat more substantive and reflected experience with RCRA. Tougher enforcement powers were given to the Environmental Protection Agency (EPA) to deal with illegal dumpers of hazardous waste; EPA's authority to regulate certain high-volume, low-hazard wastes (known as "special wastes") was restricted; funds were authorized to conduct an inventory of hazardous waste sites; and RCRA authorizations were extended through fiscal year 1982.

SUPERFUND

Properly known as the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, Public Law 96-510, enacted December 11, 1980), the "Superfund" law has five main features:

(i) it authorizes the Federal Government to respond to hazardous substance spills or releases;

(ii) it creates a $1.6 billion fund to pay for those emergency and remedial clean-up responses;

(iii) it creates an Agency for Toxic Substances and Disease Registry;

(iv) it provides for liability and financial responsibility; and

(v) it sets up a $200 million fund to cover the costs of monitoring and caring for presently active hazardous waste disposal sites, and legal liability incurred, after they have been closed down.

The following discussion elaborates on the major components of the Superfund Act:

1. RESPONSE (SECTION 104)

Whenever a hazardous substance is released or there is a threat of release into the environment, the President is authorized to take action. His response is not contingent on the nature of the hazardous substance spilled or released, however, except that petroleum and natural gas are excluded. To receive Federal assistance the State must assure (1) that it will provide future maintenance of the site; (2) the availability of any

needed offsite facility; and (3) that it will pay 10 percent of the costs of remedial action, or, if the site was owned by the State or a local government, that it will pay 50 percent of the costs. Within those limits, a State may also be reimbursed for its expenditures between January 1, 1978, and the date of enactment. The President shall consult with the affected State before responding, and his actions are to be, to the extend practicable, in accordance with the National Contingency Plan.

Section 105 of CERCLA calls for the National Contingency Plan (prepared under section 311 of the Federal Water Pollution Control Act) to be revised and republished to reflect the provisions of this act. It was to be reissued within 180 days of enactment (i.e., by June 9, 1981), but appeared in final form on July 16, 1982 (40 CFR Part 300). One part of the contingency plan is the National Priorities List on which EPA is to rank the most hazardous abandoned waste sites, making them eligible for Superfund cleanup. The list of 418 sites was announced December 20, 1982; updates brought the number to 546 sites by September, 1983.

2. THE FUND (SECTIONS 211 AND 221)

The response activities will be paid from the Superfund itself.*/ A total of $1.6 billion is to be raised over 5 years, 87.5 percent of it coming from taxes on 42 designated chemical and petroleum feedstocks, and the remainder from congressional appropriations.

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*/ Title II of Public Law 96-510, creating the cleanup funds, is labelled the Hazardous Substance Response Revenue Act of 1980, which amends the Internal Revenue Code of 1954. Section 211 imposes taxes on petroleum and certain chemicals. Section 221 establishes the Hazardous Substance Response Trust Fund (the Superfund). Section 222 limits the liability of the United States to the amounts in the fund. Section 223 contains administrative provisions, including the authority to borrow from the general fund of the Treasury. Section 231 imposes taxes on hazardous wastes for the PostClosure Liability Trust Fund, and section 232 creates that fund.

Certain chemicals listed in the tax table are exempted from payment of the tax when used for specified purposes, or when produced in certain ways. Thus, methane and butane are excused from the tax when used as fuel, as are substances used in the production of fertilizer (nitric acid, sulfuric acid, ammonia, and methane used to produce ammonia). Also exempted are sulfuric acid when produced as a byproduct of air pollution control, and any chemicals derived from coal.

Unless extended, the taxes will terminate on September 30, 1985, but could end earlier if demands on the fund do not exceed specified amounts, which appears unlikely. In addition to taxes and appropriations, the fund receives reimbursements from polluters for cleanup and other response activities under this act and under section 311 of the Clean Water Act, plus any penalties and punitive damages assessed under other provisions of CERCLA. The purposes to which the fund can be put are detailed in section 111 and include (1) response costs; (2) claims made but not satisfied under section 311 of the Clean Water Act; (3) claims by the U.S. or State governments for loss of natural resources; and (4) such related expenditures as the costs of assessing natural resources losses, the costs of epidemiologic studies, and the costs of a program to protect the health and safety of employees engaged in responding to a hazardous substance release.

An annual report is to be made to Congress on the financial condition and the operations of the fund, including the outlook for the next 5 years. The fund is given authority to borrow, with interest, from the Treasury as much as 1 year's receipts in advance.

3. AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (SECTION 104(i))

This agency is created in the Public Health Service to carry out the health-related authorities in the act. It is also to maintain a registry

of persons exposed to toxic substances; maintain an inventory of literature, research, and studies on the health effects of toxic substance contamination; provide medical care and testing in cases of public health emergencies; and periodically conduct surveys and screening programs to determine the relationship between exposure to toxic substances and illness. Facilities of the Public Health Service are to be made available to exposed persons in cases of public health emergencies.

4. LIABILITY AND FINANCIAL RESPONSIBILITY (SECTIONS 107 AND 108)

Generally speaking, carriers, disposal facility operators, and waste generators, are liable for response costs and damage to natural resources.

Limits to liability under section 107 are set as follows:

-- for vessels carrying hazardous substances as cargo or residue, the greater amount of either $300 per gross ton or $5 million (and up to half this maximum for other vessels);

-- for motor vehicles, aircraft, pipelines, or rolling stock, $50 million or a lesser amount set by regulations but in no event less than $5 million ($8 million in the case of a release of hazardous substances listed under section 311 of the Clean Water Act);

-- and for any other facility, the total of all costs of response plus $50 million for any damages.

There are no limits to liability if the hazardous substance release is due to misconduct; negligence; violation of any safety, construction, or operating standards or regulations; or if cooperation and assistance requested by a public official in connection with response activities is denied. Triple punitive damages are possible in some cases. All Federal agencies are subject to the act.

Owners and operators of vessels and facilities are required to show evidence of financial responsibility (such as insurance). For vessels over 300 gross tons (except non-self-propelled barges not carrying hazardous substances as cargo) such financial responsibility is to be the greater of $300 per gross ton or $5 million. For facilities, the amount will be set in regulations and phased in over a 3-6 year period, beginning not earlier than 5 years after enactment of the law (i.e., 1985). In the meantime, one of the studies called for in section 301 of CERCLA is to determine the availability of adequate private insurance protection. The final report from the Treasury Department in June 1983 ("The Adequacy of Private Insurance Protection under Section 107 of [CERCLA]") found that "both the marine and the property-casualty insurance markets have undertaken to respond to the growing need for pollution insurance coverage. Nevertheless, it is clear ... that both the providers and the purchasers of insurance are most seriously concerned about the 'workability' of the liability regime attendant to CERCLA."

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

Pesticides are chemicals used to control many kinds of pests: insects that attack crops, destroy materials, and serve as disease carriers; weeds; fungi and other disease-causing organisms; (soil) nematodes; and others. They have become major components of both agricultural production and health protection. Against their benefits, certain hazards must be weighed. Pesticides may be highly toxic, some are persistent in the environment, and many pose risks to nontarget organisms.

During World War II, synthetic organic pesticides were developed for use in the war effort. After the war, the pesticide industry expanded rapidly. In 1947, Congress enacted the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to protect farmers from ineffective and dangerous pesticides. It accomplished this through registration of labels that were required on all pesticides. The regulatory authority to control pesticides use comes through the requirement that before a pesticide can be marketed, it must be granted a "registration", a decision based on a determination of what uses are safe and any necessary restrictions on use.

Over the next two decades, concern grew about hazards to health and the environment from pesticides. In response, Congress enacted the Federal Environmental Pesticide Control Act in 1972 (P.L. 92-516). These amendments, which rewrote FIFRA, provided for direct controls on the use of pesticides, for classification of selected pesticides into a restricted use category, for registration of manufacturing plants, and for a national monitoring

program for pesticide residues. It also added environmental (ecological) effects to the risks to be weighed in the pesticide registration process.

REGISTRATION OF PESTICIDE PRODUCTS

Before a pesticide can be used in the United States, it must undergo a pre-market review of its potential health and environmental effects. This is a kind of licensing process. Registration, however, refers to the products allowed to be used, not who is allowed to use the products.

Section 3 of FIFRA sets out the procedures for registering pesticides. This decision is based on information which the manufacturer must submit in support of a registration. EPA must decide that a proposed pesticide registration "will not generally cause unreasonable adverse effects" on the environment.

The data required to be submitted in support of a registration is extensive and expensive. The cost of this battery of health and safety data, field trial data, and the like, can be many millions of dollars. Limited exemptions from certain requirements are allowed under certain conditions.

A manufacturer may seek to register the same pesticide formulation already registered by a competitor. To protect the economic rights of the manufacturer who originally generated the required data, Section 3 provides for compensation of data costs. FIFRA also provides a ten-year period of "exclusive use," for data submitted after 1978, during which the original registrant may not be compelled to share the supporting data.

These data sharing provisions have continually been points of contention among manufacturers. The constitutionality of the data protection provisions of Section 3 is now before the U.S. Supreme Court (Ruckelshaus v. Monsanto Co.), as part of an EPA appeal of a lower court decision which ruled

against the Agency. The case is expected to be decided during the summer months of 1984.

Section 3 also allows EPA to classify pesticides for restricted or general use. Restricted use products are ones judged to be more dangerous to the applicator or to the environment. Restricted products can be used only by those who have been "certified" through a State program, designed to assure the competence of the applicator in properly using pesticide products. Authority for Federal certification of those completing their training under a State program is found in Section 4 of FIFRA.

If the proposed regulation is for use on a food crop, EPA must also determine what is a safe level of pesticide residue on the foodstuff. These residue "tolerances" are established by EPA, but enforced by the Food and Drug Administration. The FDA has the authority to declare a foodstuff "adulterated" if the residue exceeds the specified tolerance. FDA is responsible for monitoring and enforcing these residue levels.

Instructions for the proper use of products is given on the pesticide label. Use inconsistent with label directives is a violation of FIFRA.

REREGISTRATION

Many pesticides were registered for use before the current extensive data requirements were in place. Congress directed EPA to "reregister" these older products, to assess their safety in light of current standards. EPA creates "registration standards" to evaluate these older products, but this has proven to be a very long process. Earlier reregistration deadlines contained in the statute have now been dropped altogether. Meanwhile, FIFRA allows "conditional" registration under Section 3 for these older products now undergoing further data development or review.

Conditional registrational may also be granted in some cases to new products undergoing further data development. All registrations are limited to five years, so reregistration is a continuous process.

OTHER REGISTRATION AUTHORITY

Besides the provisions of Section 3, other parts of FIFRA allow for use of pesticide products in certain special circumstances. FIFRA Section 5 allows Experimental Use Permits for purposes of research and further study. Section 18 allows for "emergency exemptions" from the provisions of FIFRA to be granted to Federal or State agencies. In addition, Section 24(c) allows a State to grant additional uses of a federally registered product to meet "special local needs."

In recent years, the number of emergency exemption and special local needs registrations have risen substantially, and have been the subject of congressional oversight and proposed amendments.

CANCELLING OR SUSPENDING A REGISTRATION

FIFRA Section 6 provides EPA with authority to cancel or immediately suspend a registration based on the finding of "unreasonable adverse effects." Both actions can be appealed by the registrant. If appealed, a cancellation order initiates a decision review process during which the product may continue to be marketed. In contrast, appealing a suspension order initiates a decision review process during which the product may not continue to be sold.

Since 1976, EPA has attempted to balance the risks and benefits of pesticides suspected of causing unreasonable adverse effects through a less formal process. The "Rebuttable Presumption Against Registration (RPAR)" program is designed to initiate a systematic and intensive comparison of the risks and benefits of pesticides which exceed some pre-established risk

criteria. For example, a compound may result in severe damage to aquatic organisms or have been found oncogenic (tumor-producing) in a rodent carcinogenecity test. These triggers, once exceeded, lead EPA to scrutinize the hazard evidence, evaluate the risks to health and the environment, and determine the optimal risk reduction strategy to eliminate unreasonable adverse effects. This strategy may include cancellation of some or all of a product's registrations, use restrictions, protective clothing requirements, and the like.

If a pesticide is cancelled or suspended in order to prevent an imminent hazard, Section 15 allows persons owning any quantity of the product to be indemnified by EPA for the economic loss of the unused product. This usually is not necessary however, as EPA has generally allowed existing stocks of such products to be used.

If EPA issues a requirement for data to support a reregistration, and development of the data is not forthcoming, proceedings for suspending the product's registration are automatically initiated by Section 3(c)(2)(B).

TRADE SECRETS AND PUBLIC DISCLOSURE

Within 30 days after a registration is granted, Section 3 directs EPA to make the required data publicly available.

However, Section 10 of FIFRA provides for the protection of certain data as trade secret information. Section 10(g) further restricts disclosure of information to foreign and multinational presticide producers or their agents. Section 10 trade secret issues are also part of the lawsuit currently being reviewed by the Supreme Court (Ruckelshaus v. Monsanto Co.).

STATE ROLES

The individual States are responsible for their training program to certify pesticide applicators in accordance with Section 4 of FIFRA. Section 26 grants the States primary enforcement authority for any pesticide use violations. Emergency exemption and special local needs registrations are initially reviewed at the State level and can be approved, subject to a Federal EPA denial based on certain relatively narrow conditions.

MISCELLANEOUS PROVISIONS

FIFRA also contains provisions regarding:

-- registration and inspection of establishments which manufacture or sell pesticide products;
-- recordkeeping;
-- penalties for misusing or mislabelling a pesticide;
-- disposal and transportation of pesticides;
-- research into pest control methods;
-- monitoring the use and impact of pesticides; and
-- cooperative agreements between State and Federal agencies.

TOXIC SUBSTANCES CONTROL ACT

Federal toxic substances control legislation was originally proposed in 1971. The President's Council on Environmental Quality published a report, "Toxic Substances," outlining the need for comprehensive chemical control legislation. The House and Senate each passed bills in both the 92nd and 93rd Congresses, but controversies over the scope of premarket screening, costs, and the relationship to other regulatory laws stymied final action. Episodes of damage to health and environment--including the kepone pesticide incident in Hopewell, Virginia, the contamination of the Hudson and other waterways by PCB, and the threat of stratospheric ozone depletion from chloroflurocarbon emissions--together with more exact assessments of the costs of imposing toxic substances controls--opened the way for final passage of the legislation, and President Ford signed the Toxic Substances Control Act (TSCA), (P.L. 94-469) into law on October 11, 1976.

TSCA was designed to provide EPA with broad authority to:

(a) induce testing of existing chemicals, those currently in widespread commercial production or use (Section 4);

(b) prevent future chemical risks through premarket screening and regulatory tracking of new chemical products (Section 5);

(c) control unreasonable risks of chemicals already known or as they are discovered (Section 6); and

(d) gather and disseminate information about chemical production, use, and possible adverse effects to human health and the environment (Section 8).

TESTING OF CHEMICALS

Many chemicals, even some in widespread use, are not well characterized as to their potential health and environmental effects. One of the major goals of TSCA was to induce the development of test data by producers of chemicals in commerce. Section 4 of TSCA gives EPA the authority to require the development of test data on existing chemicals.

Two broad regulatory thresholds are contained in TSCA: 1) the chemical "may present an unreasonable risk"; or 2) the chemical is produced in very large volume (with potential wide exposure as a result). Under either condition, EPA must further determine both: a) existing data is insufficient to resolve the question of safety; and b) testing is necessary to develop the data.

To help EPA with the question of which chemicals should first be considered for testing, and to coordinate testing needs and efforts across government agencies, TSCA created an Interagency Testing Committee (ITC). The ITC can recommend chemicals every six months to be considered by EPA for having a test rule promulgated. The "ITC list" can contain no more than 50 chemicals at any time. According to TSCA, EPA must within one year either issue a test proposal or a notice explaining why no testing is needed.

The ITC thus makes an initial determination of priorities for further EPA consideration. The ITC uses various selection criteria and conducts a quick literature review to help make its recommendations. Through 1983 the ITC had recommended 75 chemicals on 13 lists.

PREMANUFACTURE NOTIFICATION

The most innovative aspect of TSCA is Section 5, which requires a premanufacture screen of new chemical products. Such screening should prevent future widespread contamination of the environment. The idea is to have a premanufacture review assure that potential "bad actor chemicals" are identified and controlled before their use becomes widespread. The legislative history includes a presumption that testing of new products would take place before being widely used, either as the chemical was developed, or as its markets grew. At the same time, TSCA forbids blanket testing requirements for all new chemicals in order to avoid stiffling innovation in the chemical industry. EPA has to decide what chemicals, or which categories of chemicals, deserve premarket testing.

TSCA also provides authority for EPA to require a later renotification that a chemical's uses are expanding, in areas of "significant new use," and allows EPA to require testing at this point. The idea is that the market for a chemical may grow to include uses which present a greater risk. For example, the initial market for a caustic detergent additive may be industrial uses, and later the market may include consumer uses. EPA can allow the initial use with a requirement that they be notified of the second use, and at that time some further testing requirements may be imposed.

REGULATORY CONTROLS

The most general authority to regulate chemical hazards is contained in Section 6 of TSCA. EPA is given highly flexible powers to control "an unreasonable risk of injury to health or the environment." To eliminate unreasonable risks EPA can:

-- prohibit the manufacture or certain uses of a chemical;

-- require labeling;

-- limit the volume of production or concentration;

-- require record-keeping about production;

-- control disposal methods;

-- require notification of consumers; or

-- require replacement of repurchase of products.

EPA also has the flexibility to impose any of these requirements in combination or by region. At the same time, EPA is required to use the "least burdensome" regulatory approach even in controlling unreasonable risks.

Section 6(e) also directs EPA to take specific measures to control the risks from polychlorinated biphenyls (PCBs).

INFORMATION-GATHERING

Section 8 of TSCA provides information-gathering authority to EPA. It allows EPA access to data about the chemical industry's operations, production processes, and markets. Section 8 also provides authority for EPA to require close monitoring of production and exposure to the variety of chemicals used in the workplace or consumer uses.

EPA's initial requirement was to establish the "Inventory"--a first-time compilation of all existing chemicals in commerce as of 1979. This established a base against which to compare new chemical notices; all chemicals not on the Inventory are by definition new. Approximately 55,000 chemicals were identified.

Other provisions of Section 8 provide the authority to gather production volume data, as well as any health and safety data developed by or known to chemical producers and processors. EPA can also require that employee health

records and/or alleged adverse health effects data be kept for a period of 30 years.

OTHER SECTIONS

Imminent Hazards

Section 7 provides EPA authority to take emergency actions immediately against a chemical substance or mixture which presents an imminent and unreasonable risk of serious widespread injury to health or the environment.

Relation to Other Laws

Section 9 allows EPA to refer cases of chemical risk to other Federal agencies if the other agency has authority to prevent or reduce the risk. For statutes under EPA's jurisdiction, TSCA gives the Administrator discretion to decide if a risk can best be handled by TSCA.

Chemical Categories

Section 26 allows EPA to impose regulatory controls on categories of chemical, rather than on a case-by-case basis. However, EPA cannot regulate a group solely on the basis of their being new chemical substances.

Miscellaneous

TSCA includes other provisions common to other environmental statutes. These include provisions regarding enforcement of the Act, imposing penalties, judicial review, citizen petitions, research and development, state programs, and protection of employees who assist in carrying out the provisions of the Act (i.e., "whistle-blowers").

NOISE CONTROL ACT OF 1972

With enactment of the Noise Control Act of 1972 (P.L. 92-574), the EPA was given the basic authority to control noise pollution and was directed to take a comprehensive approach. This legislation authorized EPA to establish noise emission standards for products now distributed in commerce, to provide for the coordination of Federal research on noise control, and to require manufacturers of products emitting noise capable of adversely affecting the public health or welfare to label their products' noise characteristics. The Quiet Communities Act of 1978 (P.L. 95-608) extended and made minor amendments to the Act.

AIRCRAFT NOISE

A primary focus of noise control has been on protecting the public health and welfare from aircraft noise and aircraft operations. EPA's role under this legislation is to conduct comprehensive studies of the aircraft noise problem and to propose regulations and measures to abate noise. These proposals are reviewed by the Federal Aviation Authority, which has the authority to accept, modify, or reject EPA's proposals. The FAA is ultimately responsible for issuing aircraft noise regulations. The Act provides for judicial review of all FAA decisions, and under the citizen suit provisions of the Act, any individual can bring suit against the FAA or EPA Administrators for failure to perform any nondiscretionary act or duty.

NOISE FROM COMMERCIAL PRODUCTS

The Act authorizes EPA to prescribe standards limiting noise emissions for any product or class of products identified as a major source of noise in the following categories: construction equipment, transportation vehicles (including recreational vehicles), any motor or engine, and electrical or electronic equipment. The EPA was further directed to promulgate regulations for surface carriers engaged in interstate commerce, including railroads, trucks and buses.

Penalties of up to 1 year imprisonment and a $25,000 fine are provided for persons convicted of removing noise reduction devices from products that have complied with noise emission regulations or for removing noise characteristics labels from products before their sale to the ultimate purchaser. Civil penalties were added in 1978.

Other provisions of the legislation authorize the EPA to research the psychological and physiological effects of noise on human beings, animals, and property; provide technical assistance to State and local governments to facilitate development and enforcement of ambient noise standards; and disseminate public information on effects, acceptable levels, and techniques for the measurements and control of noise.

ACTIONS DURING 1981-82

The Reagan Administration decided to terminate the Federal noise control program. In the judgment of the Administration, noise control is one of the areas which properly should be regulated by State and local governments instead of the Federal Government. The proposed FY82 budget for EPA's Office of Noise Abatement and Control was therefore cut from $13 million proposed by the Carter Administration, to $2.2 million suggested by the Reagan

Administration. The remaining funding was intended to be used for an orderly termination of the program, and funding for future years was projected at zero.

In the absence of new authorization bills, the noise control program underwent a gradual phasedown during 1981 and 1982, finally ceasing to exist at the end of fiscal year 1982, on September 30, 1982. With the shutdown of the Office of Noise Abatement and Control, EPA's remaining responsibilities in this area are being handled by the Assistant Administrator for Air, Noise, and Radiation.

The Noise Control Act has not been repealed, and some of the regulations issued under its authority remain in effect. Remaining noise regulations on commercial products are in three areas: (1) products; these include portable air compressors, truck mounted solid waste compactors (i.e., garbage trucks), motorcycles, and medium and heavy trucks, (2) hearing protectors; these must be labelled as to the degree of protection they provide, and (3) interstate transportation; this includes railroads and interstate motor carriers (trucks).

These regulations may be enforced by State and local governments if they have a law or ordinance identical to the Federal regulations. On the Federal level, the EPA has enforcement responsibilities covering the first two areas, while the Department of Transportation retains the Federal enforcement responsibility for the third area, railroads and interstate motor carriers.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

Describing EPA's statutory mandate for research and development (R&D) is not straightforward, both because R&D is a broad subject and because the agency's R&D authorities grew piecemeal as parts of many environmental protection laws, enacted and amended over the years. Usually, R&D is defined quite broadly, to include basic and applied research as well as development and demonstration of technologies, plus monitoring and diverse special studies. EPA's authorities for these activities derive from various provisions in at least 13 laws:

-- the Clean Air Act, especially sections 103, 104, 153, and 319;

-- the Federal Water Pollution Control Act, especially Title I, sections 104-116;

-- the Safe Drinking Water Act, especially sections 1442 and 1444;

-- the Marine Protection, Research and Sanctuaries Act (Ocean Dumping Act);

-- the Solid Waste Disposal Act/Resource Conservation and Recovery Act, Subtitle H, sections 8001-8007;

-- the Federal Insecticide, Fungicide, and Rodenticide Act, section 20;

-- the Pesticide Research Act;

-- the Toxic Substances Control Act, especially section 10;

-- the Noise Control Act, section 14;

-- the Public Health Service Act;

-- the National Environmental Policy Act, section 204(5);

-- the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund); and

-- the Energy Security Act (Acid rain research program), Title VII.

In some cases, these statutes give EPA general R&D authorities. In other cases, they specify in considerable detail certain projects EPA is to carry out. Some of the authorizations are for continuing programs, others are for one-time studies. Originally, many of these statutes contained separate appropriation authorizations for funding research.

At least in theory some order and review was imposed on these diverse authorities by the requirement--enacted in 1976 (P.L. 94-475)--that EPA's R&D be specifically authorized separately on an annual basis. This requirement followed the decision of the House to consolidate jurisdiction for environmental R&D in the Science and Technology Committee. However, Congress failed to enact authorizations for FY1977 and FY1982, and the authorizations for FY1983 and FY1984 were vetoed successfully. The lack of authorization meant that in the House, bills appropriating funds for those programs were potentially open to objection as not complying with the rule that money cannot be appropriated without prior authorization. But this rule can be waived, and EPA's appropriations, including funds for R&D, have been approved each year--although the funds appropriated have typically been less than the previous sums authorized.

The EPA R&D authorizing bills that have been enacted (P.L. 94-475, P.L. 95-155, P.L. 95-477, P.L. 96-299, and P.L. 96-569) both (1) authorize the level and allocation of funds for the environmental media R&D programs,

(2) also address a number of R&D policy issues, especially (a) environmental R&D planning, (b) coordination of environmental R&D among Federal agencies, and (c) responsibility for conducting long-term, basic research.

The Environmental Research, Development, and Demonstration Authorization Act of 1981--the last one to have been signed into law--authorized to be appropriated to EPA for environmental research the sum of $364.70 million, divided as follows:

-- under the Clean Air Act, $70,167,000;

-- under the Clean Water Act, $64,022,000;

-- under the Safe Drinking Water Act, $27,447,000;

-- under the Solid Waste Disposal Act, $26,446,000;

-- under the Federal Insecticide, Fungicide, and Rodenticide Act, $9,435,000;

-- for radiation activities under the Public Health Service Act, $3,181,000;

-- for interdisciplinary activities, $22,845,000;

-- under the Toxic Substances Control Act, $36,895,000;

-- for energy activities, $107,599,000; and

-- for program management by EPA, $4,666,000.

(As a cost-cutting measure, the Act included a provision superimposing an across-the-board authorization cap equal to $8 million less than the sum of the specified authorizations for programs under the Act.)

In addition, the Act broke down the authorizations for many of the programs. For example, the $70,167,000 authorized under the Clean Air Act was divided into three categories: $45,243,000 for Health and Ecological Effects; $4,099,000 for Industrial Processes; and $20,825,000 for Monitoring and Technical Support. Other breakdowns specified certain projects. For

example, of the Safe Drinking Water Act funds, $4 million may be obligated and expended on groundwater research.

Finally, the Act imposed limitations on EPA's ability to transfer funds from one category to another.

While the authorizations reflected Congress' position on a number of R&D policy issues--for example, the importance of the agency's energy research--the Acts also have included explicit policy directions.

On research planning, P.L. 94-475 required EPA to prepare each year a comprehensive 5-year environmental R&D plan, to be submitted to Congress no later than two weeks after the President submits his budget. P.L. 95-155 added the requirement that the 5-year plan include projections for no-growth, moderate-growth, and high-growth budgets.

On research coordination, P.L. 95-155 assigned EPA the lead role in coordinating all Federal environmental R&D. The same act also required the Council on Environmental Quality to prepare a study of the issue. Also, the act directed EPA to study and report on its internal coordination of research with its regulatory program.

On basic research, the Congress has repeatedly directed the agency to maintain discrete programs of continuing, long-term research within each R&D activity; and to dedicate at least 15 percent of appropriated funds for each activity to such long-term research. In fact, the vetoed bill authorizing funds for FY1982 and FY1983 would have required EPA to dedicate 20 percent of its R&D funds to long-term research.

Also, in P.L. 95-477 and P.L. 96-229, Congress explicitly forbade the Administration from carrying out a proposed transfer of energy-related research conducted by EPA to the Department of Energy.

To ensure the scientific quality of EPA activities, P.L. 95-155 created within the agency a Science Advisory Board. The Board has responsibilities for reviewing agency activities, including specifically the preparation of the 5-year environmental R&D plan.

In addition, from time to time these enactments have specified funds for research areas that EPA has not proposed to undertake. For example, P.L. 95-477 specified $15 million for demonstrating wastewater reuse.

While these annual authorizations, when enacted, best represent the overall picture of statutory authority for environmental R&D, the provisions of the various environmental protection statutes also remain in effect. In fact, amendments to these statutes have included new R&D provisions, though usually without specific funding level authorizations. Ultimately, then, EPA's current and continuing authority for conducting R&D derives from a combination of authorizations in its basic environmental protection statutes, requirements and precedents arising from the environmental R&D authorization laws, and the actual levels of funds provided in EPA's annual appropriations bill.

NATIONAL ENVIRONMENTAL POLICY ACT

I. STATUTORY POLICY AND PROCEDURES

The National Environmental Policy Act (NEPA) was enacted as Public Law 91-190 on January 1, 1970.

The basic purposes of NEPA are spelled out in Section 2 as follows:

-- "to declare a national policy which will encourage productive and enjoyable harmony between man and his environment;

-- "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man;

-- "to enrich the understanding of the ecological systems and natural resources important to the Nation; and

-- "and to establish a Council on Environmental Quality."

These purposes are followed by a "Declaration of National Environmental Policy" in Title I which commits the Federal government to work with other levels of government and other groups in order to improve environmental conditions, while Title II creates the Council on Environmental Quality in the Executive Office of the President.

POLICY GOALS

In order to carry out that overall policy statement, the Act further made it the "continuing responsibility" of the Federal Government to take "all practicable" steps to reach a number of so-called substantive goals that embodied nationwide improvements in environmental quality. Specifically, the Federal environmental responsibility is--

"... to use all practicable means, consistent with other essential considerations of national policy, ... that the Nation may--

-- "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

-- assure, safe, healthful, productive ... surroundings;

-- attain ... beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

-- preserve important ... aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity ...;

-- achieve a balance between population and resource use ...; and

-- enhance ... renewable resources and ... recycling of depletable resources.

Further, in Section 101(c) the Congress adopted language recognizing that "each person should enjoy a healthful environment and that each person has a responsibility to contribute to [its] preservation and enhancement ....",

ACTION-FORCING PROCEDURES

Section 102 of NEPA states that the Congress "authorizes and directs that, to the fullest extent possible:

"(1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act; and

"(2) all agencies of the Federal Government shall [incorporate the policy and goals by utilizing new methods for considering environmental information and values].

Those directives to develop information, methods and procedures; to make detailed public disclosure of environmental effects; and to participate in appropriate local, national and international activities are required to be "useful in restoring, maintaining, and enhancing the quality of the environment."

Specifically, agencies' decisions must reflect these new dimensions:

> "(A) ... a systematic interdisciplinary approach ...;
>
> "(B) develop ... procedures [to ensure consideration of] unquantified environmental amenities and values ... along with economic and technical considerations; and
>
> "(C) include in [all] ... proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement [of environmental impact]*/ by the responsible official ...;
>
> "(D) ... under a program of grants to States ... [EIS's can] be legally ... prepared by a State agency ....**/
>
> "(E) study ... alternatives to ... any proposal which involves unresolved conflicts concerning alternative uses of available resources;
>
> "(F) ... lend appropriate support ... to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;"

II. ENVIRONMENTAL PROTECTION AGENCY FUNCTIONS UNDER NEPA

Under NEPA, each agency is responsible for reviewing and commenting on other agencies' EIS's (as to the commenting agency's expertise), in order to assess their adequacy and to coordinate interagency decision making. The EPA has developed procedures for preparing its review and public comments on all

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*/ The statement must analyze the environmental impact of the proposed action; any adverse environmental effects which cannot be avoided; alternatives to the proposed action; the relationship between local short-term uses of man's environment and ... long-term productivity; and any irreversible and irretrievable commitments of resources ... involved in the proposed action ....

Prior to taking an action, the responsible Federal official is required to consult any other Federal agency having jurisdiction or special expertise on the environmental impacts, and to make the "statement and the comments and views of the appropriate Federal, State, and local agencies ... available to the President, the Council on Environmental Quality and to the public".

**/ This new Section (D) was enacted as Public Law 94-83, August 9, 1975.

impact statements under additional authority contained in section 309 of the Clean Air Act; the standardized procedures for EIS preparation and review which apply government-wide were issued by the Council on Environmental Quality on November 29, 1978 (43 FR 55978, or 40 CFR 1500).

Legislation has substantially limited EPA's own impact statement preparation. The Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500) specified that statements would be required only for wastewater treatment construction grants and for the issuance of permits for pollutants from a new source. As the States assume the responsibilities for these EPA water pollution control programs as the law provides, even the two actions subject to EIS requirements are no longer Federal decisions, and NEPA is no longer applicable. These Amendments also sanction the use of EPA's water quality standards by other Federal agencies for purposes of compliance with NEPA, thereby overturning a holding of the Federal appeals court--in Calvert Cliffs' Coordinating Committee v. Atomic Energy Commission, 449 F.2d 1109 (D.C. Cir. 1971)--which would have required water quality determinations by the Atomic Energy Commission. Further, the Energy Supply and Environmental Coordination Act of 1974 (P.L. 93-319) provided that no impact statements would be required for any actions taken by the EPA under the Clean Air Act.

The following excerpt from EPA's testimony before the House Merchant Marine and Fisheries Committee on February 2, 1984, outlines the agency's current role in the NEPA process:

"The Office of Federal Activities ..., is responsible for working with other Federal agencies to assure that they carry out their activities in an environmentally sound manner; responsibilities of the office include the Environmental Impact Statement review program, [and] NEPA Compliance for EPA Programs ....

"... EPA has NEPA responsibility in four programs or activities. These are: construction grants, new source NPDES permits, research and development programs, and facility support activities. As part of the 1974 Policy on NEPA compliance, EPA also committed to prepare environmental impact statements on selected significant regulatory actions, although not required to do so by law. The Agency believed that the preparation of EIS's would have beneficial effects on the selected actions and established procedures for implementing the policy. These so-called voluntary EIS procedures were published in the Federal Register in October 1974. They cover specified actions under the Clean Air Act, the Noise Control Act, the Atomic Energy Act, the Federal Insecticide, Rodenticide, and Fungicide Act, and the Marine Protection, Research, and Sanctuaries Act.

"The second major responsibility is EPA's management of the filing process and records for all federal EIS's. This was originally a CEQ function, but was transferred to EPA [Reorganization Plan No. 1 of 1977] ... [T]hird, ... Section 309 of the Clean Air Act and the CEQ regulations requires EPA to review, and comment in writing on all major Federal actions, ... proposed regulations and Administration proposals for legislation."