

MANAGEMENT OF ACTIVE AND ABANDONED HAZARDOUS SITES

UNDER FEDERAL STATUTES

by

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ABSTRACT

There are over two dozen statutes that impact on the handling of hazardous wastes. However, the most critical statutes related to hazardous waste sites are essentially the "Resource Conservation and Recovery Act" for active hazardous waste sites management and the "Comprehensive Emergency Response and Compensation Liability Act" which provides for the clean-up of abandoned hazardous waste sites.

The "Clean Water Act", Clean Air Act "and Safe Drinking Water Act" are also involved in that the emissions or effluents from hazardous waste sites have to conform to the requirements of those Acts.

Federal installations, such as Department of Energy installations are required to comply not only with Federal Environmental Law but also with State Law, since much of The Federal environmental program is delegated to the States.

INTRODUCTION

As the "Torrey Canyon" went aground off the English coast in 1967, followed by similar oil tanker accidents in Puerto Rico and other locales, both industry and the U.S. Government had little hard knowledge and virtually no resources to respond to these emergencies. An oil blowout to a drilling rig in Santa Barbara channel in 1969 provided national T.V. coverage for about a month to that ecological disaster and further created a national awareness of the ecological dangers from oil spills.

As a result, and since the nation's waters were at primary risk, the Congress quickly amended the "Clean Water Act" to provide some authority and a small fund for emergency clean-up of oil spills under Section 311 of that Act. From these experiences grew an awareness that chemical spills constituted an even greater ecological menace to our national waterways and coastlines and also created hazards to public health. Thus section 311 of the clean Water Act was amended to include authority for emergency response and clean-up of chemical spills--where industry did not take prompt action. This authority was shared by the U.S. Coast Guard and the newly constituted U.S. Environmental Protection Agency.

Later, in the mid-seventies, the Congress, realizing that controlled emissions to air and water were on their way to being regulated under the Clean Air Act and Clean Water Act; passed the "Resource Conservation and Recovery Act" of 1976, in order to close the loop for control of pollutant discharges to land as well as air and water!

RCRA, as that Act is known, sought for the first time to define hazardous wastes treated, stored or disposed in land facilities and to regulate the transportation and ultimate disposal of those wastes in the best interests of public health, taking costs into consideration. This strategy was no different than that called for in the Air and Water Acts.

Thus, by 1976, the U.S.E.P.A. had the authority to regulate pollutants, contaminants and hazardous wastes that were being emitted to the air, water or land. Air and water discharge regulations were in place and work began on the regulatory policies and procedures for future discharges to land, of hazardous wastes.

At about that time, in the late seventies, the problem of "Love Canal" suddenly caught the attention of the national media. This was a large chemical waste dump site that had been given to the local government many years before. Subsequently a school was built right on the site and housing built all around it. Time passed for containers to begin to leak and subsequent heavy rains brought chemicals to the surface endangering the school and surrounding population. The location was designated as a public health hazard.

Soon thereafter other abandoned chemical waste dumps were brought to the public's attention and the U.S.E.P.A. was implored by the public, States and the Congress to rectify the situation. However, the only authority that EPA had to respond, was the Section 311 spill provision of the Clean Water Act and its small emergency fund. That fund was rapidly depleted. Clearly new legal tools and funds were necessary to react to both the short term public health emergencies and long term remedial needs of the many abandoned chemical waste sites that were beginning to come to public attention.

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E.P.A. staff therefore set about developing a proposed legislative program in 1979 and 1980. The original proposal, cleared by OMB, called for a 4 year \$4.5 billion dollar effort to clean-up the highest priority abandoned hazardous waste sites.

In December of 1980, as a result of compromises to meet chemical industry objections, the Congress passed the 5 year \$1.6 billion dollar "Comprehensive Emergency Response Compensation and Liability Act". CERCLA is popularly referred to as "Superfund"!

In addition to the several "Environmental Acts", There are over 30 other legislative Acts that impact, at least indirectly on hazardous waste sites, as noted in Fig 1.

Comprehensive Environmental Response Compensation and Liability Act (Superfund)

The EPA has on file hundreds of documented cases of damage to life and to the environment resulting from the indiscriminate handling or improper management of abandoned hazardous wastes. Well-known sites include the aforementioned Love Canal in New York, the Valley of the Drums in Kentucky, and Chemical Control in New Jersey. The vast majority of cases involve pollution of groundwater by the improper siting and management of abandoned dumps. Of course, in many cases the surface water, soil, and air are also contaminated. In the cases of explosions and fires, nearby property has been endangered.

Until recently, no Federal entity had any real legal or financial means to rectify the situation with respect to the dangers to human health posed by the thousands of abandoned hazardous-waste sites. It was not until December 11, 1980, that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was passed. This Act is normally referred to as the "Superfund".

The Superfund represents a new approach in environmental law. It does not establish a regulatory program. There are no standards or permits. Instead, liability provides the incentive for a high standard of care. The implementation of the law is not financed exclusively by the general taxpayer. Instead, it is financed primarily by those doing business in potentially hazardous chemicals and those of us who consume their products.

The Superfund, unlike other environmental laws, minimizes public intervention by making the Federal Government the actor of last resort. The responsible parties and then, the States are given the first opportunity to act. If, however, responsible parties or the States do not wish to exert their authority, then the Federal Government can step in with cleanup operations and litigate later!. For full remedial action at any site, the States are required to provide 10 percent of the project cost (50 percent if the abandoned site belongs to the State or to a locality).

Finally, this new approach to environmental law is comprehensive in that it applies to the protection of air, groundwater, surface water, and land, and it covers chemicals identified as toxic in at least five other Federal statutes.

According to the Superfund legislation, the Federal Government will be responsible for the emergency cleanup of chemical spills or other types of sudden releases to the environment. Over 5 years, a \$1.6 billion trust fund financed primarily by industry excise taxes will pay for Government remedial actions and emergency cleanup. This fund will derive 86 percent of its revenues from the excise tax and the rest from direct appropriations. After responding, the Government must try and recover its costs through a statutory liability scheme and other laws.

In addition to giving the Federal Government authority (and funding) to respond to emergency releases (or threatened releases) of hazardous substances that may endanger the public health or welfare, Superfund also authorizes the long term permanent solution of the problem of hazardous waste sites.

The rules, regulations and procedures for implementing Superfund are spelled out in "The National Oil and Hazardous Substances Pollution Contingency Plan". This document is must reading for anyone engaged in Superfund related activity!

The National Contingency Plan (NCP) as published in the Federal Register of July 16, 1982 (revised July 18, 1982), provides the official U.S. environmental policy on the implementation of both the emergency response and remedial section of the CERCLA.

The NCP covers such items as cost effectiveness versus health, the roles of the States, the EPA national hazard ranking system and the National Priorities List as well as the policies with respect to "immediate" versus "planned" removal of hazardous wastes.

Under the long term remedial program, permanent remedies are developed for the highest priority sites. Several thousand sites have been screened and based upon a risk assessment model, several hundred have been placed on the priority list for long term remedial work. The original Superfund may however, only have the financial resources for clean-up of about 200 sites. Perhaps another 200 sites will be cleaned up by responsible parties under the enforcement program of EPA.

No superfund site can however, be cleaned up with EPA funds unless there are 10% matching funds from the respective State (50% if the site is owned by a State entity). In addition Superfund encourages the State, to take the primary responsibility for clean-up and for any long term remedial maintenance measures such as monitoring of groundwater after clean-up. The concerns of local citizens are to be taken into account and thus there is also a community relations program associated with each site, as well as a technical program.

An important part of Superfund also involves the effort to identify "Principal Responsible Parties" for the waste dump and to endeavor to get those parties to voluntarily clean-up the respective hazardous waste site.

Where voluntary efforts fail, the Federal Government is empowered to sue to recover damages of up to three times the remedial response costs. Criminal penalties are also included under Superfund for those who willfully spill or discharge hazardous wastes to the environment.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was passed in 1976 and seeks to bring under national regulatory control both current and future solid waste practices. RCRA deals therefore primarily with active solid waste activities.

Under RCRA, solid waste is defined to include any garbage, refuse, sludge, or other discarded material from industrial, commercial, mining, agricultural, or community activities. Solid wastes can be in solid, liquid, semi-solid, or contained gaseous form. Hazardous wastes are a subset of solid wastes and according to EPA's classification comprise only about one percent of the total U.S. wasteload.

State and local governments are responsible for non-hazardous solid waste disposal and resource recovery actions under RCRA.

In the hazardous waste area, RCRA requires EPA to develop national standards for the identification and listing of hazardous wastes, standards for generators and transporters of such wastes, and standards for hazardous waste treatment, storage and disposal facilities. The first of these standards was issued in May 1980, and since then, there have been many revisions, amendments, and additional regulations issued. The process will continue for several more years as more refined and precise standards are developed.

The EPA regulations identify hazardous waste in two ways: either through a specific list of hazardous wastes, or through a set of characteristics. Any solid waste that is either listed in the regulations or meets any of the characteristics is considered a hazardous waste and is subject to regulatory control. There are a number of exclusions to these controls, for example, for people who generate small quantities of hazardous waste and for hazardous waste which is used, re-used, and recycled.

The 1984 RCRA Amendments revised the "small quantity generator" definition from 1000 kg/month to 100 kg/month. EPA has until March 31, 1986 to issue standards, for the 100 kg/month to 1000 kg/month generators, which "protect human health and the environment.

Several hundred specific chemical and metal wastes and effluent waste streams are listed in the EPA regulations. In addition a solid waste is considered hazardous if it meets one of four characteristics: ignitability, corrosivity, reactivity, or toxicity. The regulations provide specific tests and protocols to be used to determine whether or not a waste exhibits any of these characteristics.

RCRA also provides for standards for generators and transporters of hazardous wastes.

The generator or person who first produces a hazardous waste is responsible for determining that such wastes are hazardous. If a generator stores wastes, he must comply with the technical standards for treatment, storage, and disposal (to be described later) and he is required to have a permit.

A generator that ships hazardous waste must comply with certain transportation requirements for packaging, labelling, and marking. He must also comply with the requirements of a manifest system.

The manifest system is the key to the control of hazardous wastes. The purpose of the system is to assure that hazardous wastes are only shipped to legally operating treatment, storage, or disposal facilities. The manifest itself is a document prepared by the generator which specifies the quantity and description of the waste and designates the facility to which it must be taken. The manifest must accompany the waste shipment through all stages of

transportation. When the waste shipment arrives at the designated facility, the facility operator must compare the quantity and type of waste listed on the manifest with that actually received. If there are any discrepancies, the facility operator must notify EPA.

The facility operator must also return a copy of the manifest to the generator. This is the generator's receipt indicating that the waste was actually delivered to the designated facility.

Transporters of hazardous waste may not accept waste without a manifest. They must carry the manifest with the shipment and must deliver the shipment only to the designated facility. They must also take immediate action to protect human health and the environment in the case of a discharge of hazardous waste during transport.

The owners and operators of all facilities that treat, store, or dispose of hazardous waste are required to have a permit. This permit imposes detailed design and operating requirements on the facility. All treatment, storage and disposal facilities that were in operation and filed for a permit by November 19, 1980, were granted "interim status" and must comply with certain EPA administrative and technical operating requirements such as waste analysis, security, inspections, personnel training, emergency procedures and record keeping. A very important interim standard applies to land disposal facilities. Facilities that dispose of hazardous waste on land must carry out a groundwater monitoring program capable of determining the impact of the facility on the quality of ground water.

The 1984 RCRA Amendments provide that the land disposal of hazardous wastes must be banned unless EPA determines that the prohibition of one or more methods of land disposal (for a particular waste) is not required to protect human health or the environment. There are specific deadlines in the 1984 Amendments for banning a variety of hazardous waste from landfills unless EPA has ruled otherwise.

Facilities must also have a plan for closing the facility in a manner that protects human health and the environment. Land disposal facilities must have a plan for carrying out monitoring and maintenance of the facility for at least thirty years after closure. Facilities must also carry third-party liability insurance.

The 1984 RCRA Amendments also provide that each Federal Agency must submit biannually to EPA an inventory of each treatment, storage and disposal facility it owns/operates or owned/operated. EPA must, and authorized States may, inspect each Federal facility annually.

In addition, underground tanks containing hazardous wastes are now brought into RCRA. These do not include farm or residential fuel tanks but do include tanks with 10% or more of their volume underground, including piping.

In order to receive a permit, the applicant must submit a detailed application describing the design and operation of the facility. EPA will then make a tentative decision whether to issue or deny the permit. The application and tentative decision will then be issued for public review and comment. If requested, a public hearing will be held. EPA then considers the comments and information received and a final decision is reached.

EPA can authorize State hazardous waste programs to operate instead of the Federal program and indeed would prefer that the States assume that responsibility. When a State program is authorized, State laws and regulations take effect. This authorization avoids duplication and overlap and makes good use of State expertise and resources.

RCRA also provides EPA and the States with a full complement of enforcement tools for bolstering compliance with hazardous waste regulations. Administrative remedies for non-compliance include; issuing information gathering letters, warning letters, complaints and administrative orders to take remedial steps.

Legal remedies include both civil and criminal actions, which can result in penalties of up to one million dollars or imprisonment of up to five years.

Clean Air Act

The Clean Air Act authorizes a national program of air pollution research, regulation, and enforcement activities. Under the Act, the primary responsibility for the prevention and control of air pollution at its source rests with state and local governments, and there is a strong mandate that the EPA take action when States do not fulfill their responsibilities.

The environmental goals are generally those prescribed as National Ambient Air Quality Standards (NAAQS). Two types of standards are set: primary standards to protect human health and secondary standards to protect the public welfare (prevention of damage to property, animals, vegetation, crops, visibility, etc.). The health and other effects of pollutants are delineated in criteria documents that are the bases for the standards. There are presently NAAQS for total suspended particulates, sulfur oxides, nitrogen oxides, carbon monoxide, ozone, and lead.

Specific pollutant emission limitations required to meet NAAQS are prescribed in State Implementation Plans (SIPs). These controls are supplemented by federally prescribed national emission standards for new motor vehicles and selected new stationary sources.

In addition to the NAAQS, nationally applicable emission levels are prescribed for other pollutants deemed especially hazardous. These levels apply to both new and existing pollutant sources. National Emission Standards for Hazardous Air Pollutants (NESHAP) have been established for asbestos, beryllium, mercury, vinyl chloride, benzene, arsenic, and radionuclides. Others are under development.

There are many other activities under the Clean Air Act, including the development of standards for new sources of emissions (e.g., Volatile Organic Compounds (VOCs)), the establishment of regulations for the Prevention of Significant Deterioration (PSD) from new plant construction, and intensive research into such problems as acid rain.

Clean Water Act

All "navigable" surface waters of the United States come under the purview of the Clean Water Act (CWA). Under this Act there are several sets of regulations that are designed to clean up the nation's waterways in progressive stages and ultimately to achieve a national goal of "fishable and swimmable" surface waters.

All point sources of water pollution are subject to national standards (called effluent guidelines) that restrict discharges of significant pollutants to exact amounts. These discharge standards are in the process of being amended to include limits on 129 toxic metals and chemicals from about two dozen of our major industries.

Notwithstanding the effluent guidelines and industrial limitations, all waterways are subject to Water Quality Standards. These standards are established by the States on the basis of EPA Water Quality Criteria, which include tolerances for various aquatic species. The States also taken into account the appearance and potential end use (e.g., drinking water) of the waterways. The ultimate goal is at least "fishable and swimmable" water. Water Quality Criteria have been developed for the aforementioned 129 toxic substances.

Under Section 311 of the Act, there are provisions for protecting the nation's waterways from oil and chemical spills. A long list of chemicals subject to special reporting under this Act has also been issued. The spillage of any of these chemicals requires an immediate report to either the Coast Guard or the EPA regional office so that emergency response measures may be initiated immediately. The amounts of chemicals subject to this emergency action have now been defined under the Superfund Act. Oil spills must be reported if a noticeable "sheen" is detected on the waterway.

For some time, Section 311 of the CWA provided the only authority for response to dangers associated with abandoned hazardous-waste sites such as Love Canal. That authority was based on an assessment of the possibility of leakage from the sites into navigable waterways.

Safe Drinking Water Act

The EPA's drinking water program is primarily a public health protection effort to ensure the quality of the nation's drinking water. The Safe Drinking Water Act (SDWA) requires that the EPA develop national drinking water standards, that water utilities undertake periodic monitoring to ensure compliance with these standards, and that a joint Federal-state program oversee the implementation of the associated programs.

Two major regulatory programs established under this legislation provide the foundation for the EPA's activities: the Public Water Systems Supervision program, which ensures compliance by water utilities with appropriate drinking water quality standards; and the Ground Water Protection program, which protects present and future sources of drinking water from contamination related to injection wells.

The Interim Primary Drinking Water Regulations contain numerical standards for the traditional contaminants of health concern in drinking water that have been in effect since 1977. These standards were amended in 1979 to include limits on harmful byproducts of disinfection as well as a maximum contaminant level for trichloromethanes, the most frequently found carcinogens in drinking water.

The SDWA places primary responsibility for the implementation and enforcement of the standards on the states. The major priorities include expanded monitoring for organic chemicals, a broader basis for defining safe levels of previously unregulated organic contaminants that are being found in groundwater supplies; and assistance in responding to instances of significant contamination (e.g., chemical spills) as they are detected.

Groundwater is the source of drinking water for more than half of the nation's population. Recently, the nation has experienced an alarming increase in the number of reported cases of groundwater contamination. The discovery of high contaminant levels has prompted the abandonment of many water supply wells. This situation is attributable in large part to the improper disposal of hazardous wastes.

Regulations to protect groundwater have been promulgated under the Underground Injection Control program. The States are responsible for implementation.

Federal Facilities

Traditionally Federal facilities have not had to legally comply with State law. For example, Federal facilities do not pay State taxes.

However, several of the environmental protection statutes authorize a delegation of Federal responsibility to those States whose laws essentially are at least equal to Federal statute. Notwithstanding, certain Federal installations believed that they did not have to comply with certain Federal environmental statutes because of "exclusions" granted to their operations under such statutes as the Atomic Energy Act.

That theorem has been tested in Federal Courts and has been rejected. For example, a U.S. District Court in Tennessee ruled that the Department of Energy Y-12 Oak Ridge facility must fully comply with RCRA and the Clean Water Act.

The Court ruled that "Atomic Energy Act facilities are subject to RCRA except as to those wastes which are expressly regulated by the AEA: nuclear and radioactive materials." The court also concluded that DOE was in violation of the Clean Water Act by discharging pollutants from four locations, without permits.

As a result of these actions, the administrator of EPA and the Secretary of DOE announced as follows on August 1, 1984:

Secretary of Energy Don Hodel and Environmental Protection Agency Administration William Ruckelshaus today agreed on a joint program to apply the Resources Conservation and Recovery Act (RCRA) to facilities owned by the Department of Energy and operated under the Atomic Energy Act (AEA).

The agreement announced by Secretary Hodel and Administrator Ruckelshaus is designed to ensure continued aggressive implementation of RCRA to protect public health and the environment, and to define precisely those instances when application of RCRA to Energy facilities would be inconsistent with the Atomic Energy Act.

"Today's agreement to bring DOE facilities under the RCRA regulatory framework represents a significant step forward in the federal government's commitment to the effective management of hazardous waste and radioactive mixed wastes," Ruckelshaus said.

The Resource Conservation and Recovery Act established a broad regulatory scheme governing hazardous solid, liquid and gaseous waste materials. One purpose of RCRA was "to promote the protection of health and the environment. . . by regulating the treatment, storage, transportation, and disposal of hazardous wastes." RCRA and its accompanying regulations establish a comprehensive program for managing hazardous wastes, and this program is applicable to federal facilities. A provision of RCRA, however, states that nothing in RCRA "shall be construed to apply to any activity or substance which is subject to the . . . Atomic Energy Act of 1954, except to the extent that such application is not inconsistent with the requirements" of the AEA.

Application of RCRA to DOE facilities may be inconsistent with the Atomic Energy Act in two situations. First, different waste handling requirements may be necessary due to the radioactive nature of some wastes. Second, for national security reasons, alternative methods of providing information to the public may be necessary for some wastes from some DOE facilities.

Secretary Hodel and Administrator Ruckelshaus have formed three task forces to examine:

1. The technical requirements for applying RCRA to DOE facilities, particularly where special handling techniques must be applied to assure protection of public health and the environment;
2. Legal questions regarding the two applicable laws and the rulemaking process; and,
3. National security considerations that may require some changes in handling some information involving wastes from certain DOE facilities.

These task forces will recognize the active role to be played by the states with authorized RCRA programs. The joint DOE-EPA effort represents a clear commitment to the management of all hazardous waste in ways that assure protection of public health and the environment.

Lee M. Thomas, then EPA Assistant Administrator for Solid Waste and Emergency Response, said the substance of the agreement is already being implemented as federal and state agencies have begun to request RCRA permit applications from affected facilities. "Working with the states," he said, "we will move expeditiously to apply the protections of RCRA to DOE sites operated the Atomic Energy Act."

Date	Acronym	Act
1899	RHA	River and Harbor Act
*1906	FDCA	Federal Food, Drug and Cosmetic Act
*1947	FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
1952	DCA	Dangerous Cargo Act
*1952	FWPCA	Federal Water Pollution Control Act
*1953	FFA	Flammable Fabrics Act
1954	AFA	Atomic Energy Act
*1956	FWA	Fish and Wildlife Act of 1956
*1960	FHSA	Federal Hazardous Substances Labeling Act
*1965	SWDA	Solid Waste Disposal Act
1966	MNMSA	Metal and Non-Metallic Mine Safety Act
1969	NEPA	National Environmental Policy Act
1969	CMHSA	Federal Coal Mine Health and Safety Act
*1970	CAA	Clean Air Act
1970	PPPA	Poison Prevention Packaging Act of 1970
1970	WQI	Water Quality Improvement Act of 1970
1970	RSA	Federal Railroad Safety Act of 1970
1970	RRA	Resource Recovery Act of 1970
1970	OSHA	Occupational Safety and Health Act
1972	NCA	Noise Control Act of 1972
1972	FEPCA	Federal Environmental Pollution Control Act
1972	HMTA	Hazardous Materials Transportation Act
1972	CPSA	Consumer Product Safety Act
1972	MPRSA	Marine Protection, Research and Sanctuary Act
*1972	CWA	Clean Water Act
*1972	CZMA	Coastal Zone Management Act
1973	ESA	Endangered Species Act of 1973
*1974	SDWA	Safe Drinking Water Act
1974	TSA	Transportation Safety Act of 1974
*1974	ESECA	Energy Supply and Environmental Coordination Act
1976	TSCA	Toxic Substances Control Act
*1976	RCRA	Resources Conservation and Recovery Act
1977	FMSHA	Federal Mine Safety and Health Act
1977	SMCRA	Surface Mine Control and Reclamation Act
1978	UMTCA	Uranium Mill Tailings Control Act
1978	PTSA	Port and Tanker Safety Act
1980	CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980 (Superfund)

Reference: "Mechanical Engineering" of March 1984 (pg 80)

Fig. 1. Federal Legislation Dealing With the Manufacture, Use, Transportation, Sale, or Disposal of Hazardous Materials.

References

1. The Resource Conservation and Recovery Act of 1976, as amended November 8, 1984.
2. The Comprehensive Environmental Response and Liability Act of 1980 (Superfund), as amended.
3. The Clean Air Act of 1970, as amended.
4. The Clean Water Act of 1972, as amended.
5. The Safe Drinking Water Act of 1976, as amended.
6. "Mechanical Engineering" of March 1984 (pg 80)
7. "Hazardous Waste Management in the United States", by John H. Skinner, Industry and Environment magazine of UNEP, Special Issue-Nov 1983