Chapter 2
ENVIRONMENTAL LAWS AND REGULATORY DRIVERS

INTRODUCTION

The United States, like many other technologically advanced nations, has extensive and complex environmental laws that are designed to protect the public and the environment. Although there are differences between the environmental regulations between countries, the single most important factor that ensures minimal risks to health and the environment from exposures to wastes and pollution is the degree of enforcement. In the United States there are both aggressive enforcement and major penalties for willful violations of environmental statutes. Such penalties range from heavy fines to the termination of business operations, and even imprisonment of responsible parties. Even innocent violations or accidental releases of hazardous materials can result in very significant and costly fines, especially for situations that place the public at risk from exposure to chemicals. From a purely economic standpoint, private enterprises and governments cannot afford to be lax about the management of environmental issues surrounding their operations.

Pollution is a multimedia problem. Because pollution forms undergo transformations between states of matter, either naturally or during treatment and control, any one form of regulated waste may fall under the regulatory guidance of several environmental statutes. And as noted in the previous chapter, environmental laws are retroactive and they carry joint and several liabilities. Compliance to the laws requires ongoing costs, and there are also future financial risks from regulations even though compliance was achieved over the life of a business operation.

In this chapter a general overview of the most important environmental statutes is given. Readers that are unfamiliar with the regulations should visit the U.S. EPA Web site to assess which ones are most applicable to their operations and the wastes that they are generating.
NEPA

The National Environmental Policy Act (NEPA) was passed in 1970 along with the Environmental Quality Improvement Act, the Environmental Education Act, and the Environmental Protection Agency (EPA). The main objective of these federal enactments was to ensure that the environment be protected against both public and private actions that failed to take account of costs or harms inflicted on the eco-system. The EPA was supposed to monitor and analyze the environment, conduct research, and work closely with state and local governments to devise pollution control policies. NEPA (really enacted in 1969) has been described as some of the most far-reaching environmental legislation ever passed by Congress. The basic purpose of NEPA is to force governmental agencies to consider the effects on the environment of their decisions. State laws also reflect the same concerns; and common-law actions in nuisance allow adversely affected property owners to seek a judicial remedy for environmental harms.

RCRA

RCRA is the Resource Conservation and Recovery Act, which was enacted by Congress in 1976. RCRA's primary goals are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. RCRA regulates the management of solid waste (e.g., garbage), hazardous waste, and underground storage tanks holding petroleum products or certain chemicals.
RCRA provides legal definitions of hazardous wastes. A waste may be considered hazardous if it is ignitable (i.e., burns readily), corrosive, or reactive (e.g., explosive). A waste may also be considered hazardous if it contains certain amounts of toxic chemicals. In addition to these characteristic wastes, EPA has also developed a list of more than 500 specific hazardous wastes. Hazardous waste takes many physical forms and may be solid, semisolid, or even liquid. In 1999, more than 20,000 hazardous waste generators produced over 40 million tons of hazardous waste regulated by RCRA.

In any given state, EPA or a state hazardous waste agency enforces the hazardous waste laws. EPA encourages states to assume primary responsibility for implementing the hazardous waste program through state adoption, authorization, and implementation of the regulations. Many types of businesses generate hazardous waste. For example, the following types of businesses typically generate hazardous waste: dry cleaners, auto repair shops, hospitals, exterminators, and photo processing centers. Some hazardous waste generators are larger companies, such as chemical manufacturers, electroplating companies, and petroleum refineries. The RCRA hazardous waste program regulates commercial businesses as well as federal, state, and local government facilities that generate, transport, treat, store, or dispose of hazardous waste. Each of these entities is regulated to ensure proper management of hazardous waste from the moment it is generated until its ultimate disposal or destruction. Hazardous wastes that are generated in the home, such as mineral spirits and old paint, are not regulated by the federal RCRA program. Many communities provide collection centers or pick-up services for the management of household hazardous waste. Local recycling centers or fire departments may be able to provide more information about locations and details.

According to the EPA regulations, solid waste means any garbage, or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. In 1998, approximately 220 million tons of municipal solid waste or garbage was generated in the United States. This means each person generated an average of 4.46 pounds of solid waste per day. Landfills that collect household garbage are predominately regulated by state and local governments. EPA has, however, established minimum criteria that these landfills must meet in order to stay open. The only hazardous waste that municipal landfills can accept is household hazardous waste and waste that is exempt from hazardous waste regulation.
CLEAN AIR ACT

The Clean Air Act (42 U.S.C. § 7401 et seq. (1970)) is the comprehensive federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes the U.S. EPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. The goal of the act was to set and achieve NAAQS in every state by 1975. The setting of maximum pollutant standards was coupled with directing the states to develop state implementation plans (SIPs) applicable to appropriate industrial sources in the state. The act was amended in 1977 primarily to set new goals (dates) for achieving attainment of NAAQS since many areas of the country had failed to meet the deadlines. The 1990 amendments to the Clean Air Act in large part were intended to meet unaddressed or insufficiently addressed problems such as acid rain, ground-level ozone, stratospheric ozone depletion, and air toxics.

CLEAN WATER ACT

Growing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act. The act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The Clean Water Act also continued requirements to set water quality standards for all contaminants in surface waters. The Act made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. It also funded the construction of sewage treatment plants under the construction grants program and recognized the need for planning to address the critical problems posed by non-point-source pollution. Subsequent enactments modified some of the earlier Clean Water Act provisions. Revisions in 1981 streamlined the municipal construction grants process, improving the capabilities of treatment plants built under the program. Changes in 1987 phased out the construction grants program, replacing it with the State Water Pollution Control Revolving Fund, more commonly known as the Clean Water State Revolving Fund. This new funding strategy addressed water quality needs by building on EPA-state partnerships.

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum
industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over 5 years, $1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA:

- Established prohibitions and requirements concerning closed and abandoned hazardous waste sites
- Provided for liability of persons responsible for releases of hazardous waste at these sites
- Established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT

42 U.S.C. 11001 et seq. (1986), also known as Title III of SARA, EPCRA was enacted by Congress as the national legislation on community safety. This law was designated to help local communities protect public health, safety, and the environment from chemical hazards. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). The
SERCs were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee (LEPC) for each district. Broad representation by fire fighters, health officials, government and media representatives, community groups, industrial facilities, and emergency managers ensures that all necessary elements of the planning process are represented.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT

The Superfund Amendments and Reauthorization Act (42 U.S.C.9601 et seq. (1986)) reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements were added to the legislation, including additional enforcement authorities. Title III of SARA also authorized the Emergency Planning and Community Right-to-Know Act (EPCRA). SARA reflected EPA's experience in administering the complex Superfund program during its first 6 years and made several important changes and additions to the program. SARA:

- stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites
- required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations
- provided new enforcement authorities and settlement tools
- increased state involvement in every phase of the Superfund program
- increased the focus on human health problems posed by hazardous waste sites
- encouraged greater citizen participation in making decisions on how sites should be cleaned up
- increased the size of the trust fund to $8.5 billion

SARA also required EPA to revise the Hazard Ranking System (HRS) to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the National Priorities List (NPL).
NATIONAL CONTINGENCY PLAN

The National Oil and Hazardous Substances Pollution Contingency Plan, more commonly called the National Contingency Plan or NCP, is the federal government's blueprint for responding to both oil spills and hazardous substance releases.

The National Contingency Plan is the result of our country's efforts to develop a national response capability and promote overall coordination among the hierarchy of responders and contingency plans. The first National Contingency Plan was developed and published in 1968 in response to a massive oil spill from the oil tanker Torrey Canyon off the coast of England the year before. More than 37 million gallons of crude oil spilled into the water, causing massive environmental damage. To avoid the problems faced by response officials involved in this incident, U.S. officials developed a coordinated approach to cope with potential spills in U.S. waters.

The 1968 plan provided the first comprehensive system of accident reporting, spill containment, and cleanup and established a response headquarters, a national reaction team, and regional reaction teams (precursors to the current National Response Team and Regional Response Teams).

Congress has broadened the scope of the National Contingency Plan over the years. As required by the Clean Water Act of 1972, the NCP was revised the following year to include a framework for responding to hazardous substance spills as well as oil discharges. Following the passage of Superfund legislation in 1980, the NCP was broadened to cover releases at hazardous waste sites requiring emergency removal actions.

Over the years, additional revisions have been made to the NCP to keep pace with the enactment of legislation. The latest revisions to the NCP were finalized in 1994 to reflect the oil spill provisions of the Oil Pollution Act of 1990.

Refer to Table 1 for a summary of the regulations that implement the Emergency Response Plan. Note as an example that "40 CFR 300" means that the regulation is in Volume 40, Part 300, of the CFR.
Table 1. Regulations Implementing the Emergency Response Plan

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**OIL POLLUTION ACT**

The Oil Pollution Act (OPA) was signed into law in August 1990, largely in response to rising public concern following the *Exxon Valdez* incident. The OPA improved the nation's ability to prevent and respond to oil spills by establishing provisions that expand the federal government's ability, and provide the money and resources necessary, to respond to oil spills. The OPA also created the national Oil Spill Liability Trust Fund, which is available to provide up to $1 billion per spill incident. In addition, the OPA provided new requirements for contingency planning both by government and industry. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) has been expanded in a three-tiered approach: the Federal government is required to direct all public and private response efforts for certain types of spill events; Area Committees, composed of federal, state, and local government officials, must develop detailed, location-specific Area Contingency Plans; and owners or operators of vessels and certain facilities that pose a serious threat to the environment must
prepare their own facility response plans. Finally, the OPA increased penalties for regulatory noncompliance, broadened the response and enforcement authorities of the federal government, and preserved state authority to establish law governing oil spill prevention and response.

**FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT**

The primary focus of FIFRA (7 U.S.C. s/s 136 et seq. (1972)) was to provide federal control of pesticide distribution, sale, and use. EPA was given authority under FIFRA not only to study the consequences of pesticide usage but also to require users (farmers, utility companies, and others) to register when purchasing pesticides. Through later amendments to the law, users also must take exams for certification as applicators of pesticides. All pesticides used in the United States must be registered (licensed) by EPA. Registration ensures that pesticides will be properly labeled and that if used in accordance with specifications, they will not cause unreasonable harm to the environment.

**OCCUPATIONAL SAFETY AND HEALTH ACT**

Congress passed the Occupational and Safety Health Act (29 U.S.C. 651 et seq. (1970)) to ensure worker and workplace safety. Their goal was to make sure employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. In order to establish standards for workplace health and safety, the act also created the National Institute for Occupational Safety and Health (NIOSH) as the research institution for the Occupational Safety and Health Administration (OSHA). OSHA is a division of the U.S. Department of Labor that oversees the administration of the act and enforces standards in all 50 states.

**POLLUTION PREVENTION ACT**

The Pollution Prevention Act (42 U.S.C. 13101 and 13102, s/s et seq. (1990)) focused industry, government, and public attention on reducing the amount of pollution through cost-effective changes in production, operation, and raw
materials use. Opportunities for source reduction are often not realized because of existing regulations, and the industrial resources required for compliance, focus on treatment and disposal. Source reduction is fundamentally different and more desirable than waste management or pollution control. Pollution prevention also includes other practices that increase efficiency in the use of energy, water, or other natural resources and protect our resource base through conservation. Practices include recycling, source reduction, and sustainable agriculture.

SAFE DRINKING WATER ACT

The Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. (1974)) was established to protect the quality of drinking water in the United States. This law focuses on all waters actually or potentially designed for drinking use, whether from aboveground or underground sources. The act authorized EPA to establish safe standards of purity and required all owners or operators of public water systems to comply with primary (health-related) standards. State governments, which assume this power from EPA, also encourage attainment of secondary standards (nuisance-related).

TOXIC SUBSTANCES CONTROL ACT

The Toxic Substances Control Act (TSCA, 15 U.S.C. s/s 2601 et seq. (1976)) of 1976 was enacted by Congress to give EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. EPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. EPA can ban the manufacture and import of those chemicals that pose an unreasonable risk. Also, EPA has mechanisms in place to track the thousands of new chemicals that industry develops each year with either unknown or dangerous characteristics. EPA then can control these chemicals as necessary to protect human health and the environment. TSCA supplements other federal statutes, including the Clean Air Act and the Toxic Release Inventory under EPCRA.

A SHORT REVIEW

When dealing with solid wastes and pollution, there is no one single law that applies. Environmental compliance requires a keen understanding of all the environmental laws that may impact on an operation. The way companies address
this most effectively is through the application of an *initial environmental review* or IER.

An IER examines the environmental aspects associated with an operation and determines which regulations require compliance. Compliance is best handled by means of an *environmental management system* or EMS, of which the most well-known one is ISO14001.