

Toxic Substances Control Act - PCB Regulation

Introduction

Congress enacted the Toxic Substances Control Act (TSCA) on October 11, 1976 as a supplement to other federal environmental regulations. The TSCA established requirements for identifying and controlling toxic chemical hazards to human health and the environment. It is a tool by which the EPA regulates all aspects of the testing, reporting, manufacturing, processing, distribution in commerce, use, and disposal of toxic chemical substances and mixtures that pose an unreasonable risk to health or the environment. A major benefit of the TSCA was quality management of chemicals, which brought about a change in the way companies organize and track information on chemicals and caused them to seek ways to prevent releases and negative impacts to human health and the environment.

Polychlorinated biphenyls (PCBs) are one such chemical substance that became regulated under the TSCA after it was determined that PCBs tend to be persistent in the environment and are toxic. PCBs were sold under the trade name of "Aroclor" and could be found in liquid or nonliquid phases or as a combination of the two phases. Section 6(e) of the TSCA specifically addressed PCB's and banned the manufacture, processing, distribution, and use of PCBs other than in a totally enclosed manner, unless authorized by the EPA. This section of the TSCA requires the EPA to establish rules for the manufacture, processing, distribution in commerce, use, storage, disposal, and marking of PCB's and equipment contaminated with PCB's. The rules (40 CFR Part 761) were first published in the Federal Register on May 31, 1979 and on August 28, 1998 received their first major revision, known as the Mega Rule, which consumed 91 pages in the Federal Register.

Revisions incurred a year later (June 24, 1999) included: procedures for requesting approval for risk-based sampling, cleanup, storage, or disposal of PCB remediation waste; procedures for risk-based decontamination or sampling of decontaminated material where those activities occur in more than one EPA Region; and several technical corrections (1999 Technical Corrections). In addition, the EPA published several Information Collection Requests that have not resulted in any further rules. However, on March 30, 2001, an interpretive final rule was published that narrowed the interpretation of "import" to allow PCB waste in U.S. territories and possessions outside the U.S. to be transported to the U.S. for destruction or disposal. As of January 2002, no other significant changes have occurred. The Mega Rule and its progeny are discussed in more detail below.

Regulatory Summary

On June 29, 1998, the EPA promulgated the Final Rule (Mega Rule) for the Disposal of PCBs, which became effective on August 28, 1998. The Mega Rule specifically addresses the natural gas pipeline systems and allows for the characterization of natural gas pipeline systems and components based on the actual PCB concentrations at removal, rather than former presumptions or historical data. This rule provides more flexibility in PCB disposal practices while continuing to provide protection from unreasonable risk.

PCB Classifications

The regulatory requirements that apply to materials containing PCBs depend on the PCB concentration. The three classifications based on PCB concentrations are: (i) <50 parts per million (ppm) or the equivalent <10 ug/100cm², (ii) >50 ppm and <500 pp₂m or the equivalent 10 - 100 ug/100 cm², and (iii) >500 ppm or the equivalent >100 ug/100 cm. PCBs under 50 ppm are not regulated by TSCA. The EPA has used various administrative mechanisms to declassify or decontaminate pipeline systems and components. Several methods for determining PCB concentration are described in the Mega Rule.

Manufacturing, Processing, Distribution in Commerce, and Use of PCBs and PCB Items

Natural gas pipeline systems contaminated in the past with PCBs ≥ 50 ppm are authorized for use and reuse, provided the owner or operator notifies the EPA of the contamination, characterizes its extent, samples and analyzes potential sources of contamination, and takes remedial measures such as removing the contamination sources or reducing the PCB concentration to <50 ppm and documents these actions. However, the EPA does not allow the introduction of PCBs into natural gas pipeline systems at any concentration.

Marking of PCBs and PCB Items

Marking is required for all PCB items, containers, storage units or areas, and transport vehicles. Due to potential exposure to PCB liquids, natural gas pipeline companies are required to mark all aboveground sources containing PCB liquids at concentrations >50 ppm. The EPA has established specific marking requirements, including size, color, and location of the marks.

Storage and Disposal

All PCB wastes generated from natural gas pipelines, such as liquids and solids contaminated with PCBs, must be stored in accordance with EPA requirements. PCB articles and containers must be dated and properly labeled when placed in storage for disposal and must be disposed within one year, or longer with EPA approval. The facility used for storage must comply with the storage for disposal requirements. Temporary storage areas can be used for up to 30 days. Generator Long-Term Storage Facilities may be used to store PCBs for up to nine (9) months.

The EPA specifies requirements for disposal of all PCB wastes, including used pipe, condensate, and other liquids and solids contaminated with PCBs at levels >50 ppm or 10 ug/100 cm². The disposal options are based on the PCB concentration.

All PCB articles stored for reuse are required to be properly marked/labeled, indicating the date of removal and intended future use and can be stored at the facility not more than five years. After five years, these articles must be moved to an EPA-approved storage facility. This requirement is due to the concern that long-term storage may result in deterioration of PCB articles and release of PCBs.

PCB Cleanup

The PCB Spill Cleanup Policy establishes methods of cleanup and cleanup levels of spills containing PCBs at concentrations of 50 ppm or greater. It specifies cleanup of PCBs to different levels depending on the spill location, the potential for exposure to residual PCBs remaining after the cleanup, the concentration of the PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. The Policy imposes the most stringent requirements in areas of greatest potential for human exposure to spilled PCBs, less stringent requirements where the type and degree of contact present lower potential exposure, and even less stringent requirements where there is little potential for any direct human exposure.

Record Keeping and Reporting

The EPA requires that records be maintained for the storage, transportation, disposal of PCBs, or any other activity involving PCBs, for tracking from generation to disposal in a cradle-to-grave fashion. Records to be maintained include annual activity logs, correspondence with the shipper of the waste, certificates of disposal, and volumes and weights of all PCB waste shipped during the year. All records are to be maintained for at least three years.

1999 Technical Corrections

The 1999 Technical Corrections were more than correcting typographical errors. The first rules published in 1979 were obviously directed primarily at equipment used in the control and distribution of electricity. The Mega Rule recognized the significance of PCBs to the production and distribution of natural gas and created a regulatory scheme that, while still complex, was better suited to address issues faced by the natural gas industry. On balance, the 1999 Technical Corrections pushed the state of the regulatory art a bit further:

- Disposal requirements for PCB-contaminated electrical equipment are now, from a regulatory standpoint, identical to those of PCB-contaminated articles.
- Drained PCB-contaminated articles are technically exempt from the storage-for-disposal, manifesting, and annual record keeping requirements. The strict storage requirements and one-year storage limitation of 40 CFR 761.65 no longer apply. Caveat: Records relating to the suitability of the storage area for such articles, analysis of oil drained from such articles, shipping papers from the transporter for disposal, and certificates of destruction should be maintained.
- PCB-contaminated porous surfaces no longer need to be wipe tested if the contamination is a result of a spill of liquid containing less than 50 ppm PCBs. If the spill contained 50 ppm or more, the double wash and paint procedures 40

CFR 761.30(b) apply even if a wipe test indicates less than 10 ug/100 cm².

- Respiratory protection is now required (in addition to dermal protection) for workers disposing of PCB-contaminated articles.

The EPA now has a PCB Home Page (www.epa.gov/opptintr/pcb) that has links to 40 CFR Part 761, a set of the Natural Gas Pipeline Questions and Answers, and an abundance of information about PCBs in general. This page is an excellent resource.

Natural Gas Industry

Due to their remarkable insulating capacity and their flame-retardant nature, PCBs were widely used as coolants and lubricants. In the natural gas industry, PCB contamination occurred due to the use of PCB-containing lubricating oils and greases in natural gas compressors, valves, and air compressors, fogging of pipeline with PCB-containing oil vapor to minimize entrainment of dust and other particles in the pipeline system, and PCB migration from contaminated pipelines into other systems.

In 1972, the manufacturer voluntarily ceased the production of PCBs and advised users that PCB's tend to persist in the environment and may be toxic. The pipeline companies began to phase out the use of PCB lubricants in compressors and to replace them with non-PCB lubricants. In the early 1980s, PCBs were detected in natural gas pipeline liquids. These pipeline liquids are composed primarily of hydrocarbon condensates associated with the production and transmission of natural gas. Liquids are entrained in the gas stream, which condense and collect at low points along the system. Pipeline liquids may have become PCBimpacted by lubricating oils that leaked past the seals of the compressors.

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Federal Insecticide, Fungicide, and Rodenticide Act

Introduction

Pesticides are useful in their ability to kill or control disease-causing organisms that threaten humans, crops, ornamental and wild plants, domestic animals, and wildlife. By their nature, however, most pesticides involve risks because they are designed to be biologically active and have a negative effect on living organisms. For these reasons, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was enacted on October 21, 1972. The FIFRA seeks to protect public health and the environment by ensuring that workers are trained in proper application techniques, pesticides are properly handled, stored and registered, and the location or content of pesticides are made known to emergency response units, medical personnel, and workers who may be exposed to the chemicals. The EPA has also established the Office of Pesticide Programs, which oversees the pesticide regulatory issues of registration/re-registration, special reviews, field implementation and communication, information, guidance, and program management.

Regulatory Summary

In general, all pesticide products must be registered with the EPA prior to sale. The term "pesticides" includes herbicides, insecticides, rodenticides, fungicides, and fertilizers. Therefore, it includes products that not only impede growth but also enhance growth.

Pesticide Classifications

Prior to registering a pesticide for use, the EPA classifies each pesticide. The assigned classification is based on the kind of risk it will cause to humans and the environment. This determination is made using health and safety tests conducted by the manufacturer. Pesticides are classified in one of three categories:

- General Use Pesticides are those found *not* to have unreasonable adverse effects on the environment, when used according to directions.
- Restricted Use Pesticides are those found to have unreasonable adverse effects, including injury to the applicator, if additional regulatory restrictions are not imposed.
- Mixed Use Pesticides are those classified as general use pesticides for certain purposes and as restricted use pesticides for other purposes.

State-specific classifications may be more stringent than the federal FIFRA classifications; therefore, applicable state regulations should be reviewed.

Pesticide Registration Process

Registration

Prior to the sale or distribution of a pesticide in the U.S., the company must obtain a registration or license from the EPA. This registration requires information on the applicant, labeling information, directions for use, pesticide name and formula, requested pesticide classification and complete test data (if requested by the EPA). The EPA must ensure that the pesticide, when used according to label directions, will not cause unreasonable adverse effects to human health or the environment. Based on the EPA's review of the applicant's pesticide data, a decision is made, and the EPA must grant or deny the application within ninety days of receipt.

Re-registration

Pesticides are reviewed and re-registered by the EPA. The goal is to update labeling and use requirements and reduce potential risks associated with active ingredients in registered pesticides.

Recalls/Cancellation

The EPA has the authority to cancel or suspend registrations and to change the use classification. These actions may be taken if new information indicates that the pesticide violates FIFRA provisions, causes unreasonable adverse effects, or presents an imminent hazard or emergency. The EPA may also order a voluntary or mandatory recall of a pesticide that has been suspended or canceled.

Storage, Disposal and Transportation

The EPA may require a registrant or applicant to submit information regarding methods for the safe storage and disposal of excess quantities of pesticides. Transportation of pesticides must comply with the requirements for hazardous material shipment as set by the U.S. Department of Transportation (DOT).

Natural Gas Industry

In the natural gas industry, herbicides are the most widely used pesticide along the pipeline system. The application of herbicides is generally at the facility station yards or along the right-of-way. Best Management Practices (BM's) should be established for the application and use of herbicides at facilities. Employees should review and understand information provided on the pesticide's Material Safety Data Sheet (MSDS) prior to application. Since a majority of the natural gas industry facilities retains the services of licensed applicators, many of the regulatory requirements established by the FIFRA are not applicable directly to the industry. However, this summary of the key section of the FIFRA is provided to outline the measures taken to protect our environment.

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Superfund Amendments and Reauthorization Act

Title III

Introduction

The Superfund Amendments and Reauthorization Act (SARA) was adopted in 1986, adding three additional "Titles" to the regulations (Title III, Title IV, and Title V). Title III, which is entitled "Emergency Planning and Community Right-To-Know Act" (EPCRA), most impacted the natural gas industry.

The EPCRA (also known as the "Community Right to Know") was enacted to prevent and/or prepare for disastrous chemical release incidents such as the Bhopal, India incident of 1984. By alerting communities about the potentially dangerous chemicals present in their surrounding area, citizens become prepared for situations such as chemical releases. The successful implementation of this regulation relies on a foundation of effective emergency response management in the event of a chemical release.

Regulatory Summary

SARA Title III has four distinct and separate requirements that trigger chemical reporting to several agencies and three basic reporting requirements, as follows:

Extremely Hazardous Substance (EHS) Reporting

A facility that has on hand at any time an extremely hazardous substance (as listed by the EPA), in excess of a predetermined amount, must:

- Notify the State Emergency Response Commission (SERC),
- Designate a Facility Emergency Coordinator, and
- Work with the Local Emergency Planning Committee (LEPC) to develop a facility-specific emergency response plan.

If a reportable quantity of an EHS or CERCLA Hazardous Substance is released at a facility, measures to make immediate verbal notifications as well as written follow-up notifications to the NRC (National Response Center), SERC, and LEPC must be in place. These notifications are required only if the EPA-established reportable quantity is released at the facility and could endanger human health or the environment.

311/312 Reporting

The natural gas industry does most of its reporting under Sections 311 and 312 of SARA Title III, which require the following:

- Under Section 311, a facility is required to submit a one-time report using the chemicals for which the facility is required to maintain a Material Safety Data Sheet (MSDS), generally referred to as a "311 Report".
- Under Section 312, a facility is required to submit an annual report to the agencies if a chemical on the 311 Report is stored onsite at any given time in an amount greater than 10,000 pounds (or 500 pounds, if it is an EHS). The report also provides information on the name, type, hazards, storage amount, and location of hazardous material onsite. This report is generally referred to as a "312 Report" or "TIER II Report".

These reports are submitted to the SERC, LEPC, and local fire departments. Several states have enacted regulations that exceed the federal requirements under this section. Some of the more stringent requirements include state forms, state fees, and more stringent reportable quantities. Facilities should review state regulations for specific requirements.

There have been no substantive changes to the Federal TIER II reporting requirements since 1998. However, the EPA's website (Chemical and Emergency Preparedness Office, www.epa.gov/ceppo) now provides two potentially very useful tools:

- Free software (Tier2 Submit) for the submission of annual Tier II reports. The most recent version was posted January 24, 2002. Please check with each state to which you report. Most states are not equipped to receive the Tier II Report electronically, but the software can save historical data and make preparation of new reports much less time consuming.
- A searchable version of EPA's October 2001 Consolidated List of Chemicals Subject to the EPCRA and Section 112(r) or the Clean Air Act (also known as the "List of Lists"). New searching options include search by name or by CAS number. The document is also available in PDF.

313 Reporting

The natural gas industry is currently exempt from Section 313 of the SARA Title III. Industries that are required to report under this section must submit an annual Toxic Chemical Release Inventory Form (better known as "Form R") to the EPA and the SERC. The amounts of toxic chemicals that leave the facility boundaries are reported on this form.

Since its first reporting year, several industries that were not regulated by this section have been added. The natural gas industry will continue to monitor this in anticipation of meeting future reporting requirements under Section 313.

Natural Gas Industry

Natural gas facilities that store greater than 10,000 pounds of any hazardous material onsite during any one day of the report year must submit an annual report to various agencies. This report, which is summarized under *311/312 Reporting*, provides agencies with information on

the name, amount, hazards, storage type, and location of hazardous material maintained onsite. This information is available to the public and is generally utilized in the event of an emergency.

Although the Superfund Amendment and Reauthorization Act is a federal regulation, each state is responsible for its implementation and enforcement. As a result, each state might have a slightly different reporting form, instructions, and requirements. A company that operates facilities in multiple states must ensure that the proper report is filed according to each state's instructions and that a copy is sent to each Local Emergency Planning Committee (LEPC) and fire department within the immediate vicinity of the facility filing the report. Many states and LEPC's also require fees to be paid when a report is filed.

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