Guidance on the Management of Polychlorinated Biphenyls (PCBs)

November 1993

Prepared by
U.S. Department of Energy
Office of Environmental Guidance
RCRA/CERCLA Division
(EH-231)
Washington, D.C.

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memorandum

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SUBJECT: Environmental Guidance on the Management of Polychlorinated Biphenyls (PCBs)

TO: Distribution

The purpose of this memorandum is to provide Program Offices and Field Organizations with a copy of an environmental guidance document entitled: "*Guidance on the Management of Polychlorinated Biphenyls (PCBs)*" developed by the Office of Environmental Guidance, RCRA/CERCLA Division (EH-231). The attached document provides guidance to DOE elements on implementation of and compliance with the PCB regulations set forth in 40 CFR 761 under the authority of the Toxics Substances Control Act (TSCA).

In preparing this document, EH-231 distributed a draft version to selected Program Offices and Field Organizations, and the Environmental Protection Agency (EPA) for review and comment. All comments received have been considered in preparing the final document, and we believe the input provided by the reviewers has improved the utility, application, and the quality of this document. EH-231 wishes to express its appreciation for the comprehensive, professional job that these organizations provided in reviewing this document and in assisting us in finalizing the guidance. While no one document can be expected to address all aspects of compliance with the PCB regulations, the attached guidance does provide a comprehensive framework of the existing Federal PCB regulatory requirements for personnel with line management/oversight responsibilities (e.g., waste operations and ES&H personnel).

Unlike the typical narrative style, the approach taken in the guidance is graphic in nature, utilizing flowcharts, tables and checklists to provide a "roadmap" of the PCB requirements. Pertinent information is presented in a simple, direct, and easily understood way. At first glance the manual may appear somewhat imposing, however, upon closer inspection you will find that its modular format and structure allows the user to focus efficiently and effectively on those aspects of the PCB regulations of interest to the user. For example, Chapter 2, "Characterization of PCB Materials" assists the user in classifying the particular PCB material of interest. Once identified, the reader can then turn to the Chapter covering those regulatory requirements of interest (e.g., marking, storage, transportation, etc.).

Questions regarding the Federal PCB regulations, in general, or the attached guidance, in particular, may be directed to Carolyn Thompson of my staff at (202) 586-8248.

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Executive Summary

Polychlorinated biphenyls (PCBs) are a class of synthetic organic chemicals including 209 known isomers, each with from 1 to 10 chlorine atoms on a biphenyl ring. PCBs have a number of desirable properties for industrial applications including thermal stability, flame retardance, and low vapor pressure. Because of these properties, PCBs were widely used as dielectric fluid in electrical equipment such as utility transformers and capacitors. PCBs were also extensively used in hydraulic fluid and heat transfer fluid, in gaskets, as additives in cutting oils and lubricant, and in a variety of other uses.

The Toxic Substances Control Act (TSCA) was enacted on October 11, 1976 [PL 94-469]. TSCA Section 6(e) banned the manufacture of PCBs after 1978 in response to emerging information about the adverse health effects of PCBs and their persistence in the environment. In addition, TSCA directed the Administrator of the Environmental Protection Agency (EPA) to prescribe methods for disposal of PCBs, require marking of PCBs with warning labels, and control their use. The first PCB regulations, promulgated at 40 CFR Part 761, were finalized on February 17, 1978.

The TSCA regulations allow continued use of PCBs provided that the use is totally enclosed and does not pose a risk to human health or the environment. However, at the end of their useful life, all PCB materials must be disposed of according to the TSCA regulations. The degree of regulation is based on several factors: the type of PCB equipment or form of PCBs (e.g., contaminated soil, debris, liquids), its PCB concentration, and whether or not it is considered a waste. In addition, PCB material mixed with a RCRA hazardous waste or contaminated with radioactive material is subject to additional restrictions.

The ultimate objective of the TSCA regulations is to control use for ultimate disposal regardless of PCB concentration; however, the regulations at 40 CFR Part 761 place few restrictions on materials with a concentration of < 50 ppm, unless those materials were contaminated with, or are the result of dilution of, PCBs at a concentration of ≥ 500 ppm.

This guidance document uses graphics and flow charts where possible to present the TSCA regulations according to management activities such as use, storage, disposal, and spill cleanup. The document is designed to be read on an as-needed basis; that is, each chapter can stand alone or may be read in combination with others to help the reader determine the regulations relevant to his or her individual situation and needs. Every attempt has been made to include the requirements of other statutes and regulations that apply to PCB materials and provide references for the reader to consult for additional information. In addition, the Department of Energy's Office of Environmental Guidance (EH-231) has added clarifying information and suggestions for PCB management in italicized text. It is hoped that the result of this effort is a guidance document that will serve as both a handy reference manual and a straightforward and thorough explanation of the TSCA regulations at 40 CFR Part 761 for the entire DOE complex.

CHAPTER 1

INTRODUCTION

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1.1 PURPOSE AND SCOPE

Because the Department of Energy (DOE) must comply with pertinent regulations for the management of polychlorinated biphenyls (PCBs), the Office of Environmental Guidance prepared this manual to assist DOE facilities in complying with the Federal requirements applicable to PCBs. By following the step-by-step procedures in this manual, any DOE facility should be able to define the requirements applicable to its situation.

All Federal statutes that regulate PCBs have been considered in this guidance manual. The most comprehensive set of PCB management regulations has been established under the Toxic Substances Control Act (TSCA) at 40 CFR Part 761 (see Figure 1-1), and these requirements will be the primary focus of this manual. Where other Federal requirements are applicable, the manual provides, at a minimum, appropriate citations to these requirements. In addition, this document addresses the most common PCB management scenarios at DOE facilities, such as use of PCB equipment, storage and transport of PCBs, and cleanup of PCB spills. It does not address in detail certain technical requirements under TSCA that will not apply to most DOE facilities, such as requirements for the operation of a TSCA incinerator or chemical waste landfill. Similarly, certain facility standards (e.g., underground storage tank requirements, Spill Prevention Control and Countermeasure [SPCC] plans, etc.) under other regulatory authorities are considered beyond the scope of this document. They are included by reference, but are not presented in detail. DOE orders that contain requirements pertinent to PCBs are also cited as appropriate.

This document does not cover PCB requirements promulgated at the state level, because each state may regulate PCBs differently within its environmental regulatory program. In some states, PCBs are considered hazardous waste subject to requirements similar to those of the Resource Conservation and Recovery Act (RCRA). Other states have regulatory programs that do not exist at the Federal level (such as environmental laws regulating the transfer of property). Such state requirements must be investigated at the facility level to complete the PCB compliance picture.

Figure 1.1
OUTLINE OF 40 CFR PART 761

40 CFR Part 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions	
Subpart A: General	Subpart F: (Reserved)
761.1 Applicability	Subpart G: PCB Spill Cleanup Policy
761.3 Definitions	761.120 Scope
761.19 References	761.123 Definitions
Subpart B: Manufacturing, Processing, Distribution in Commerce, and Use	761.125 Requirements for PCB spill cleanup
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761.30 Authorizations	761.135 Compliance and enforcement
Subpart C: Marking	Subpart H-I: (Reserved)
761.40 Marking requirements	Subpart J: PCB Waste Disposal Records and Reports
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761.65 Storage for disposal	761.208 Use of the manifest
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1.2 MANAGING PCBs: AN HISTORIC PERSPECTIVE

Polychlorinated biphenyls (PCBs) are part of an extensive series of synthetic organic chemicals known as chlorinated hydrocarbons. There are over 200 PCB isomers and compounds, which vary from mobile, oily liquids to white, crystalline solids and hard resins.

Between 1929 and 1977, PCB-containing products were offered by chemical manufacturers for use in applications where stable, fire-resistant, heat-transfer properties were demanded. The most extensive use of PCBs occurred in dielectric fluids sold under such trade names as Aroclor, Askarel, Pyroclor, Sanotherm, and Pyranol. Such fluids typically have the following characteristics: a heavy oily appearance, high boiling point, high chemical stability, high flash point (low flammability), low electrical conductivity, extremely low vapor pressure (nonvolatile), and a specific gravity of approximately 1.2 to 1.4. They were used, often as an extra cost option, as a replacement for mineral oil formulations in transformers, capacitors, switch gear, electric motors, mining equipment, and hydraulic equipment. PCBs were also used as plasticizers and additives in lubricating and cutting fluids. PCBs have not been produced commercially in the United States since 1977, when the major U.S. manufacturer ceased production.

The very property that made PCBs desirable in commercial applications (i.e., their chemical stability) caused them to resist metabolic processes that would break them down to simpler compounds. PCB contamination was discovered throughout the world due to the bioconcentration, bioaccumulation, and biomagnification of PCBs in the food chain. These findings were of concern as PCBs were known to cause chronic reproductive effects, gastric disorders, and skin lesions in laboratory animals. PCBs were also suspected to be carcinogenic, although little animal testing had been done at the time. (In 1988, the U.S. Environmental Protection Agency [EPA] considered the strength of the evidence available at the time and concluded that PCBs were probable human carcinogens, based on sufficient evidence of carcinogenicity in animals but inadequate data in humans.)

In addition to the PCBs themselves, concerns have been raised regarding other substances and contaminants that are frequently associated with PCBs in electrical equipment. First, many PCB mixtures are contaminated with polychlorinated dibenzofurans (PCDFs), which are more toxic than PCBs. Second, most PCB dielectric fluids that were in transformers (e.g., Askarel, Pyranol, Inerteen) are a combination of about 60% PCBs and 40% chlorinated benzene. A product of incomplete combustion of chlorinated benzene is polychlorinated dibenzo-p-dioxin (PCDD), which is much more toxic than PCDF. Soot from transformer fires contains PCBs, PCDFs, and sometimes small amounts of dioxins, and is extremely toxic.

Congress responded to the public's concerns, spurred by media reports, that humans and the environment were being increasingly exposed to many toxic chemical substances and mixtures that were being developed and produced with little regard to their impact on human health and the environment. Congress chose to regulate such substances through the Toxic Substances Control Act (TSCA), Public Law 94-469, enacted on October 11, 1976. TSCA went farther in the regulation of specific chemicals than any prior law. It mandated, through EPA-promulgated regulations, restrictions on use and distribution in commerce of various chemicals, of which PCBs were the most publicized.

1.3 FEDERAL REGULATION OF PCBs

Federal PCB regulations promulgated under the Toxic Substances Control Act are found in the Code of Federal Regulations (CFRs) at 40 CFR 761. Other laws and regulations affect PCB management in certain circumstances and may overlap, or supplement, TSCA. A brief summary of PCB requirements from each of the laws and regulations that can affect PCB management is presented below.

■ Toxic Substances Control Act (TSCA), 15 U.S.C. 2601-2629

PCBs are regulated principally under TSCA. The TSCA regulations provide a comprehensive framework for the control of PCB manufacture, distribution in commerce, use, storage, and disposal. TSCA contains stringent requirements regarding the use and management of non-waste PCBs and PCB equipment as well as waste PCBs and PCB equipment. It is important to note that TSCA is a federally run program. Both EPA Headquarters and the EPA Regions have specific authority to implement and manage the program. There is no provision in TSCA for "State authorization." However, states may regulate PCBs through their own state statutes and regulations.

Regulatory Issue

State Enhancement

EPA is considering recognizing other state-issued PCB storage and disposal permits such as an expanded state hazardous waste management program or a state TSCA equivalent, as long as they are no less stringent than the TSCA PCB program. EPA would still provide Federal oversight of PCB storage and disposal activities. It is hoped that these state enhancement activities would eliminate duplicative permit proceedings and reduce paperwork.

■ Atomic Energy Act of 1954 (AEA), as amended, 42 U.S.C. 2011, et seq.

PCB material that becomes contaminated with radioactive constituents is also subject to the Atomic Energy Act of 1954, as amended. In such situations, DOE facilities should consult the applicable DOE orders for meeting the special requirements for these materials. DOE orders that apply are the 5400 series orders and/or DOE Order 5820.2A "Radioactive Waste Management."

■ **Clean Air Act (CAA), 42 U.S.C. 7401, et seq.**

PCBs are on the list of hazardous air pollutants in the 1990 amendments to the Clean Air Act. Given TSCA restrictions regarding the use of PCBs, it is not likely that the CAA will impact the average user of this manual unless the user is treating PCBs in some manner (e.g., by incineration). The national emission standard for PCBs, once it is promulgated by EPA, will be published in 40 CFR Part 61. No national emission standard for PCBs has been promulgated as of August 1993.

■ **Clean Water Act (CWA), 33 U.S.C. 1251, et seq.**

Section 311 of the Clean Water Act and its implementing regulations [40 CFR Parts 110-117] set forth penalties and liabilities incurred by any person who spills oil or hazardous substances into the waters of the United States in quantities greater than the Reportable Quantities (RQ). PCBs are designated hazardous substances with an RQ of one pound (RQs have also been set under CERCLA and are found at 40 CFR Part 302).

In addition, a Spill Prevention Control and Countermeasure Plan, as described in the regulations implementing the CWA [40 CFR 112.3], is required pursuant to TSCA PCB requirements [40 CFR 761.65(c)(7)(ii)] for facilities storing PCBs in containers larger than those specified by the U.S. Department of Transportation (DOT). Storage of PCBs is discussed in detail in Chapter 7, "Storage."

PCBs are also "priority pollutants" subject to effluent standards [40 CFR Part 129] that prohibit the discharge of PCBs into the waters of the United States by PCB manufacturers, capacitor manufacturers, and transformer manufacturers (note that PCB discharges by other facilities would not be authorized under TSCA). Under the authority of Section 304(a) of the CWA, the ambient water quality criteria (that is, the criteria that surface water bodies should meet) level of concern for PCBs is set at a very low level (0.000079 parts per billion [ppb]).

There is a 3-ppb limit for PCBs in effluent releases to water; this primarily applies to manufacturers of asphalt roofing materials and of pulp and paper products. Because this limit is unlikely to impact most of DOE's operations, it is not discussed further in this guidance. For additional information, refer to 53 *Federal Register* 24208.

■ **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, Pub. L.96-510. L.99-499**

The implementing regulations of CERCLA at 40 CFR Part 300, known as the National Contingency Plan (NCP), establish procedures and standards for responding to releases of hazardous substances, pollutants, and contaminants. PCBs are included on the CERCLA

list of hazardous substances [40 CFR 302.4]. A release to the environment of the reportable quantity RQ (one pound or more in the case of PCBs) over a 24-hour period must be reported to the National Response Center.

PCBs are a contaminant of concern at CERCLA sites, with preliminary remediation goals set as low as 1 ppm for unlimited residential land use and 10 to 25 ppm at industrial sites (based on EPA guidance, varies from site to site). At sites where this goal is adopted as the final cleanup standard, contaminated soils would have to be remediated until PCBs are detected at lower than the above levels. The preliminary remediation goal for contaminated groundwater that could potentially be used as a drinking water supply is 0.5 ppb, which is also the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act (USEPA 1990).

■ **Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), 42 U.S.C. 11001-11050**

The Emergency Planning and Community Right-to-Know Act (EPCRA) established programs to provide the public with information on the hazardous and toxic chemicals (including PCBs) in their communities and established emergency planning and notification requirements to protect the public in the event of a release of any of these chemicals into the environment. Although EPCRA does not require Federal facilities to comply with its requirements, it has been DOE policy to comply, in accordance with DOE Order 5500.3A, "Planning and Preparedness for Operational Emergencies." On August 3, 1993, Executive Order 12856 was issued, requiring Federal agencies to comply with the emergency planning and community right-to-know provisions and all implementing regulations established pursuant to EPCRA. The requirements of EPCRA relevant to PCB management are discussed in Chapter 14, "Other Regulatory Requirements," Section 14.5 of this guidance document.

■ **Federal Facility Compliance Act of 1992, Pub. L. 102-386**

The Federal Facility Compliance Act requires DOE to submit site-specific mixed waste treatment plans to EPA or the appropriate State regulatory agency. "Mixed waste" is a term used to describe waste that contains both hazardous waste regulated under the Resource Conservation and Recovery Act (RCRA) and source, special nuclear, or byproduct material subject to the Atomic Energy Act (AEA). PCB waste, which is regulated by TSCA, is not subject to the requirements of the Federal Facility Compliance Act. However, DOE may address the following types of waste through a national compliance plan: (1) radioactive wastes containing PCBs (but no RCRA hazardous waste component) and (2) wastes regulated under state hazardous waste laws, which may include wastes containing PCBs at concentrations lower than those regulated by TSCA. The National Compliance Plan for DOE Mixed Waste is intended to integrate DOE's mixed waste management activities into

a coordinated national plan to ensure development of adequate mixed waste treatment capacity. Proposed schedules and activities developed in the planning process for the National Compliance Plan will be incorporated into the site-specific mixed waste treatment plans required by the Federal Facility Compliance Act. For more information about the implementation of the Federal Facility Compliance Act, refer to the draft "DOE Strategy for Development of a National Compliance Plan for DOE Mixed Waste," published at 57 *Federal Register* 57170, December 3, 1992.

■ **Hazardous Material Transportation Act (HMTA), 49 U.S.C 1801**

PCBs are a hazardous material as defined by HMTA for the purposes of transportation in commerce. HMTA implementing regulations are given at 49 CFR Parts 172, 173, and 178. These parts provide pertinent regulations regarding packaging, labeling, vehicle placarding, hazard classification, and container specifications.

■ **Occupational Safety and Health Act (OSHA), Pub. L.91-596**

OSHA has established limits for exposure to PCBs in air. The exposure limit for employees must not exceed the 8-hour Time Weighted Average (TWA) permissible exposure limit (PEL) of 1 mg/m³ for chlorodiphenyl (42% chlorine) and 0.5 mg/m³ for chlorodiphenyl (54% chlorine) given at 29 CFR 1910.1000 (Subpart Z).

OSHA also has promulgated a Hazard Communication Standard [29 CFR 1910.1200 for general industry and 29 CFR 1926.59 for construction]. The Hazard Communication Standard was created to ensure that all workers and employers are aware of dangerous chemicals, including PCBs, in the workplace and know how to protect themselves from the hazards they pose.

The Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard [29 CFR 1910.120] addresses worker health and safety at CERCLA response sites and RCRA corrective action sites. Its provisions also apply to routine operations at RCRA hazardous waste treatment, storage, and disposal facilities, and all emergency response operations at sites where hazardous substances (including PCBs) have been or may be released, including transportation accidents.

■ **Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901, et seq.**

PCBs are neither listed nor characteristic RCRA hazardous waste; however, if they are mixed with a RCRA hazardous waste they must be managed in compliance with applicable requirements under both TSCA and RCRA (e.g., manifesting, storage). Where the requirements of the two statutes conflict, the TSCA regulations at 40 CFR 761.1(e) provide that the more stringent regulations govern.

Although PCBs are not considered RCRA hazardous wastes, there are RCRA provisions that specifically regulate PCBs. One example is the RCRA land disposal restrictions (LDRs). Any PCB material that is mixed with a RCRA hazardous waste that is land disposal restricted or prohibited under the LDRs must meet the treatment standard or obtain an LDR variance for that hazardous waste prior to disposal. Certain mixtures of PCBs and RCRA hazardous waste defined in the LDRs ("California list" PCBs) must meet treatment standards that were specifically promulgated to address the PCB component of the waste [40 CFR 268.42]. It should also be noted that PCBs are listed as one of the constituents in the treatment standard for multi-source leachate (RCRA Waste Code F039).

The Hazardous and Solid Waste Amendments (HSWA) of 1984 required that EPA promulgate regulations to address corrective action at RCRA treatment, storage, and disposal (TSD) facilities [42 U.S.C. 3004(u,v)]. These regulations are known as RCRA Subpart S [58 *Federal Register* 8658]. This rule requires owners or operators of a facility seeking a permit under Subpart C of RCRA to address any releases of contaminants from solid waste management units (SWMUs) at the facility as a permit condition. The list of contaminants in Appendix VIII of 40 CFR Part 261, which includes PCBs, and site characteristics are used by the facility and regulators as a benchmark for the purpose of setting corrective action standards. The facility and regulators identify the concentration limits for each of these hazardous constituents (as specified in 40 CFR 264.100) and these standards are placed into the facility's RCRA permit. For more information on RCRA Subpart S, see the EH-231 Environmental Guidance Regulatory Bulletin "Corrective Action Management Units and Temporary Units: CAMU/TU Final Rule Issued" (U.S. DOE 1993).

Some dielectric fluids containing PCBs are exempt from the RCRA Toxicity Characteristics (TC) Rule [55 *Federal Register* 11841], which means that they are not regulated as RCRA hazardous wastes even though they may contain TC constituents. Refer to Section 2.5 for more information.

■ **Safe Drinking Water Act (SDWA), 42 U.S.C. 300, et seq.**

Under the Safe Drinking Water Act, Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs) are established. MCLs must be attained by public water supplies, and MCLGs are levels that produce no known adverse effects on human health over a lifetime. The MCL for PCBs is 0.5 ppb and the MCLG is zero [40 CFR 141.61]. Thus, in cases where DOE is the provider of a public water supply, the PCB MCL must be met. In addition, MCLs are generally used as remediation goals for CERCLA Response Actions and RCRA corrective actions where the groundwater is a potential drinking water supply.

1.4 HOW TO USE THIS GUIDANCE

This manual may be used by individuals who have various levels of knowledge of PCB regulations. All users should read Chapter 2, "Characterization of PCB Materials," at least once to gain a familiarity with the criteria whereby TSCA regulates PCB activities. The user who is inexperienced with the TSCA regulatory program should read the steps detailed in Chapter 2 for characterizing PCB materials. Once familiar with the manual and the regulatory program, the user may turn directly to the chapter that covers the action that is anticipated or the specific regulatory requirements governing a given PCB material. Section 1.5 provides a brief overview of the contents of each chapter.

1.4.1 ORGANIZATION OF A TYPICAL CHAPTER

This guidance manual is organized into chapters according to specific types of PCB management activities (e.g., storage, disposal, recordkeeping). Typically, a chapter contains a **table of contents**, an **introduction**, a section on **general requirements and considerations**, a **master flow chart**, a number of **modules** (each addressing specific regulatory requirements), a **list of references**, and a **checklist** that allows PCB managers to identify areas of non-compliance with PCB regulations.

The **introduction** identifies the activity covered in the chapter. It indicates where in the Code of Federal Regulations the Federal regulatory requirements for that activity can be found. It also points out the location of supplemental topics in other chapters of this manual and identifies topics that are not covered.

The **general requirements and considerations** section describes regulatory requirements that apply to all PCB materials (in contrast to the requirements described in the modules that may apply only to specific PCB materials or under specific circumstances). Regulatory requirements of statutes other than TSCA are also presented here, typically by citation only. These requirements are presented first, as they should be considered in tandem with the graphics in a chapter.

The **master flow chart** provides a step-by-step procedure for determining the Federal requirements relevant to the PCB management activity that is the subject of the chapter. It consists of two parts: first, graphical information and second, supplemental text. The supplemental information elaborates on the questions posed at decision points in the graphics. This information will assist the user in arriving at the correct modules.

The **modules** address the specific regulatory requirements for the PCB material of interest to the user. Each module begins with a **reminder box** that sketches the decision path the

user should have taken in the master flow chart to arrive at the module. The reminder box is a quick means for users to ensure that they are in the right place in the manual. The modules next present specific regulatory requirements in text form, if the requirements are relatively straightforward, or in graphical form, if they are complex in nature. Under no circumstances should modules of a chapter be taken out of context and used without referring to the accompanying graphics. The modules of any chapter cannot stand alone. They must be used as directed by the chapter's master flow chart, which leads the user in a logical progression through applicable regulatory requirements.

Although the purpose of this guidance document is to describe the Federal regulations and other requirements for PCB management, particularly those under TSCA, there are several areas where these regulations are not explicit (i.e., where a "jump" in logic is required). Areas where additional interpretation is needed are discussed in **italicized text** throughout this manual to distinguish DOE's interpretations of, and in some cases recommendations deriving from, the regulatory requirements.

A list of **references** is included at the end of each chapter. *Federal Register* notices, Code of Federal Regulations (CFR) citations, and DOE Orders are not included in the reference list because the on-line citation provides adequate information for DOE personnel to access the source document. The on-line citation for references included in the reference list consists of the author and date in parentheses.

A **checklist** concludes each chapter. The checklist is not a comprehensive summary of the regulations discussed in the chapter. It is designed to assist DOE personnel in identifying areas of noncompliance by posing questions that encourage DOE personnel to closely scrutinize their current PCB management practices. If a particular module does not apply, none of the questions associated with the module will be applicable.

1.4.2 FLOW CHART SYMBOLS

Flow charts are a central element of this guidance. The flow charts provide step-by-step procedures that should be followed to identify Federal PCB regulations. All of the flow charts in this manual use one or more of the symbols described in Figure 1-2.

1.4.3 INFORMATION BOXES

The manual also uses boxes located in the text to highlight for the user certain types of information. Figure 1-3 discusses the types of boxes that users will encounter and the type of information each contains.

1.4.4 MATHEMATICAL SYMBOLS

The following mathematical symbols are used throughout this guidance, particularly with respect to concentrations of PCBs:

> Greater than (e.g., > 50 ppm reads "greater than 50 ppm").

< Less than (e.g., < 50 ppm reads "less than 50 ppm").

$\geq$ Greater than or equal to (e.g., ≥ 50 ppm reads "greater than or equal to 50 ppm").

$\leq$ Less than or equal to (e.g., ≤ 50 ppm reads "less than or equal to 50 ppm").

Figure 1-2
FLOW CHART SYMBOLS

Ovals Containing the word "Start" represent the beginning of a new flow chart;

Diamonds Represent decision points (evaluate the question contained in the diamond and follow the appropriate path);

Shaded Rectangles Point you to a particular section of the manual (either the General Requirements and Considerations section or a specific module in a chapter);

Un-shaded Rectangles Contain notes describing specific regulatory requirements;

Circles Direct you to a continuation of the flowchart on another page;

Figure 1-2
FLOW CHART SYMBOLS

**Rounded
Rectangles**

Indicate the end of a path, in some cases they may direct you to additional sections within a chapter.

In addition to the above symbols, the flow charts use:

Step Numbers

(1,2,3, etc.) for ease of cross-referencing between the graphics and the accompanying supplemental information.

**Decision Path
Identifiers**

Identify a specific path (i.e., response) to a question asked in a diamond. The identifiers ease the process of cross-referencing between the graphics and the supplemental information.

Figure 1-3
INFORMATION BOXES

A **Double-lined Box** appears at the beginning of each module. It provides reminders that describe the possible decision path(s) in the Master Flow Chart of a chapter that could have been taken to arrive at the module. The symbol →, which appears in these boxes, represents the direction of the path through a master flow chart.

Reminder

A **Single-lined Box** contains information that clarifies or amplifies a specific aspect of a regulatory requirement discussed in the text.

Clarification

A **Dashed-lined Box** provides a "heads-up" concerning special regulatory requirements.

Caution

Figure 1-3
INFORMATION BOXES

A **Shaded, Single-lined Box** either describes DOE comments provided to EPA regarding a particular aspect of the existing PCB regulations or indicates areas of the existing regulations that EPA is likely to revise based on the Advance Notice of Proposed Rulemaking (ANPRM) published in the *Federal Register* on June 10, 1991 [56 *Federal Register* 26738]. These boxes often point out problems in complying with the requirements that are unique to DOE. EPA may or may not address these issues in future rulemaking actions.

Regulatory Issue

A **Shaded, Double-lined Box** contains the checklist questions found at the end of most chapters.

Checklist

1.5 OVERVIEW OF CHAPTERS

This manual has been prepared to serve as both a comprehensive document for the management of PCBs and also as a reference for isolated management activities such as disposal, storage, or transport of PCBs and PCB Items. To facilitate the manual's use, Figure 1-4 serves as a general aid to direct users to the appropriate chapter. The visual introduces the activity described in the chapter, provides a brief overview, and identifies the major topics discussed. The figure also identifies the source of regulatory requirements for the PCB management activity described in the chapter.

Figure 1-4

Visual Overview of Chapters

Chapter 4

Servicing Equipment

Requirements and restrictions associated with equipment servicing operations

- ❖ Servicing requirements (including rebuilding and topping off fluids)
- ❖ Reclassification to a lower PCB concentration category

TSCA 40 CFR Part 761

Subpart B: Manufacturing, Processing, Distribution in Commerce, and Use
761.20 Prohibitions
761.30 Authorizations

Chapter 5

Inspecting PCB Items

Conducting visual inspections of equipment and containers for leaks

- ❖ Visual inspections of equipment for leaks
- ❖ Visual inspections in PCB storage areas

Chapter 6

Marking

Locations and equipment that require the PCB mark

- ❖ The PCB mark
- ❖ Placement of the mark
- ❖ Marking requirements
- ❖ Unmarked items
- ❖ Transport vehicles
- ❖ Transformer locations
- ❖ Storage areas

TSCA 40 CFR Part 761

Subpart C: Marking
761.40 Marking requirements
761.45 Marking formats

Chapter 7

Storage

Storage of PCB materials for use or reuse and storage requirements for PCB wastes awaiting disposal

- ❖ Prohibited storage
- ❖ Storage for reuse
- ❖ One-year storage limit
- ❖ Storage containers
- ❖ PCB storage facility requirements
- ❖ Temporary storage
- ❖ Commercial storage
- ❖ Storage on pallets adjacent to a PCB storage facility
- ❖ SPCC Plan requirements

TSCA 40 CFR Part 761

Subpart D: Storage and Disposal
761.65 Storage for disposal

Chapter 8

Transport

Manifesting requirements associated with the transport of PCBs

- ❖ Manifesting requirements
- ❖ Certificates of Disposal
- ❖ DOT requirements

TSCA 40 CFR Part 761

Subpart B: Manufacturing, Processing, Distribution in Commerce, and Use
761.207 The Manifest—general requirements
761.208 Use of the manifest.

Visual Overview of Chapters (Continued)

Activity

Chapter Overview

Major Topics

Regulations Covered

Chapter 12

Spill Reporting and Cleanup

Spill and leak response and cleanup pursuant to the TSCA PCB Spill Cleanup Policy

- ◆ Immediate requirements
- ◆ Spill reporting
- ◆ Fire-related incidents
- ◆ PCB Spill Cleanup Policy
- ◆ Spill concentration
- ◆ Decontamination
- ◆ Remediation requirements for old spills
- ◆ Disposal of contaminated materials
- ◆ Post-cleanup sampling
- ◆ Documenting cleanup

TSCA 40 CFR Part 761
Subpart G: PCB Spill Cleanup Policy
761.120 Scope
761.125 Requirements for PCB spill cleanup
761.130 Sampling requirements
761.135 Compliance and enforcement

Chapter 13

Burning Used Oil for Energy Recovery

RCRA and TSCA requirements for burning PCB-contaminated used oil for energy recovery

- ◆ "Rebuttable presumption"
- ◆ Used oil regulated as RCRA hazardous waste
- ◆ RCRA requirements
- ◆ TSCA requirements
 - Testing to determine PCB concentration
 - Marketing restrictions
 - Certification notices
 - Recordkeeping
 - Combustion facilities

TSCA 40 CFR Part 761
Subpart B: Manufacturing, Processing, Distribution in Commerce, and Use
761.20 Prohibitions

RCRA 40 CFR Part 279

Chapter 14

Other Regulatory Requirements

Worker protection and community right-to-know requirements under OSHA and SARA Title III (EPCRA)

- ◆ OSHA worker protection standards (HAZWOPER)
 - Training
 - Personal Protective Equipment (PPE)
 - Emergency response
 - Air monitoring
- ◆ Hazard Communication Standard
 - Material Safety Data Sheets (MSDS)
 - Training
 - Labeling
- ◆ SARA Title III (EPCRA) requirements

OSHA
29 CFR 1910.120
29 CFR 1910.1200

EPCRA
40 CFR Parts 350-372

Supplemental Information

Glossary

Common terms used in the TSCA regulations

Sources:
40 CFR 761.3
40 CFR 761.123

Appendices

Appendix A:
State PCB Programs

Appendix B:
Salvaging Options for Transformer Carcasses

Appendix C:
Notification Requirements for Multiple Storage Areas (EPA letter)

Appendix D:
Federally Sponsored Hotlines

Appendix E:
U.S. EPA Contacts

Appendix F:
EPA and DOE Organization Charts

Appendix G:
Alternative Storage Containers

Index

Cross-reference of important PCB terms and issues.

1.6 REFERENCES

USEPA. 1990. Guidance on remedial actions for Superfund sites with PCB contamination. Washington, DC: U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. EPA/540/G-90/007.

USDOE. 1993. Corrective Action Management Units and Temporary Units: CAMU/TU Final Rule issued. Washington, DC: U.S. Department of Energy. Office of Environmental Guidance, RCRA/CERCLA Division (EH-231). Regulatory Bulletin. May 12, 1993.

CHAPTER 2
CHARACTERIZATION OF PCB MATERIALS

CONTENTS	<u>PAGE</u>
2.1 Introduction	2-1
2.2 What is the TSCA PCB Category for the Material?	2-3
2.3 Is the Material to be Managed as a Waste?	2-11
2.4 What is the Concentration of PCBs in the Material?	2-13
2.5 Is the PCB Material Mixed with RCRA Hazardous Waste?	2-23
2.6 Is the PCB Material Contaminated with Radioactive Constituents?	2-25
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2.1 INTRODUCTION

To follow the graphical presentation of PCB regulatory requirements found in most of the chapters of this document, you must first determine the answers to the following five basic questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

The following five sections in this chapter address these questions and provide the background information needed to answer each question listed above.

2.2 WHAT IS THE TSCA PCB CATEGORY FOR THE MATERIAL?

The TSCA regulations often establish requirements and restrictions for PCB activities according to the type of PCB material. This section will help you determine how the TSCA regulations classify the type of material that you have.

As a result of the way the TSCA PCB regulations have evolved, PCB materials fall into several categories (Figure 2-1). The figure shows that PCB materials have been divided into two groups within the regulations: PCBs and PCB Items. These two major groups (i.e., PCBs and PCB Items) are defined below. PCB Items are further subdivided into four categories: (1) PCB Articles, (2) PCB Containers, (3) PCB Article Containers, and (4) PCB Equipment.

■ PCBs

The TSCA regulations at 40 CFR 761.3 define the term "PCBs" as follows:

"... any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance..."

However, when used in the body of the TSCA regulations, the term PCBs includes all manner of materials that have been mixed with or have come into contact with PCBs, excluding PCB Items. Figure 2-1 illustrates the types of materials that are regulated as PCBs.

■ PCB Items

PCB Items are manufactured materials that contain PCBs or have PCBs within them. The placement of PCBs in an Item may be either intentional or unintentional. There are four subcategories of PCB Items in the regulations:

- (1) PCB Articles. Any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. PCB Articles include capacitors, transformers, electric motors, pumps, pipes, and other manufactured items that:

-- Are formed to a specific shape or design during manufacture,

- Have end use function(s) dependent in whole or in part upon its shape or design during end use, and
 - Have either no change of chemical composition during its end use or only those changes of composition that have no commercial purpose separate from that of the PCB Article.
- (2) PCB Containers. Any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) **has been in direct contact** with PCBs (e.g., drums containing PCBs).
- (3) PCB Article Containers. Any package, can, bottle, bag, barrel, drum, tank, or other device used to contain non-leaking PCB Articles or PCB Equipment, whose surface **has not been in direct contact** with PCBs.
- (4) PCB Equipment. Any manufactured item, other than a PCB Container or a PCB Article Container, that contains a non-leaking PCB Article or other PCB Equipment, including: microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures. *Items in this category have surfaces that **have not been in direct contact** with PCBs.*

Working from left to right, Figure 2-1 presents the two major PCB material groups and the associated categories and subcategories used in the TSCA regulations. Use Figure 2-1 to determine which categories apply to your PCB material. Additional explanations of the meanings of some regulatory terms used in Figure 2-1 may be found in the glossary at the end of this document.

Once your material is placed in the proper TSCA PCB category, you are ready to proceed to Sections 2.3 through 2.6.

Clarification

Special Considerations When Classifying PCB Material

You should be aware of the following special considerations when classifying your PCB material.

- **"Direct Contact with PCBs"**
"Direct contact" means contact with either the inner or outer surfaces of a PCB Item.
- **PCB Containers v. PCB Article Containers**
The difference between PCB Containers and PCB Article Containers is whether or not the container has been in direct contact with PCBs.
- **PCB Equipment v. PCB Electrical Equipment**
Note that PCB Equipment (e.g., microwave ovens and light ballasts) does not have direct contact with PCBs; it merely contains a non-leaking PCB Article such as a PCB Small Capacitor. On the other hand, PCB Electrical Equipment is a type of PCB Article. PCB Electrical Equipment (e.g., transformers and capacitors) has been in direct contact with PCBs, either by design or as a result of a leak or spill.
- **PCB Capacitors**
There are three types of PCB capacitors: PCB Small Capacitors, PCB Large High-voltage Capacitors, and PCB Large Low-voltage Capacitors. Refer to the Glossary definition of "capacitor" for more information on classifying PCB Capacitors.

Figure 2-1
PCB Identification Chart
 Based on Regulatory Definitions in TSCA (40 CFR 761)

Figure 2-2
CATEGORIZING PCB MATERIALS

SUPPLEMENTAL INFORMATION FOR CATEGORIZING PCB MATERIALS

Start It is important to categorize your PCB materials so that you will be able to determine which PCB regulations apply to you. Figure 2-1 graphically illustrates the PCB categories used in 40 CFR Part 761 to regulate PCB material.

Step 1 Examine Figure 2-1 to gain an overall view of how the TSCA regulations categorize PCB materials.

Step 2 Is your PCB material listed in Figure 2-1? If yes, proceed to Step 3. If your PCB material is not included in the figure, skip to Step 4.

Step 3 Use Figure 2-1 to identify the category(ies) and group that apply to your PCB material.

Example: Find "capacitor" in Figure 2-1. The figure shows that "capacitor" is a subcategory of "electrical equipment" and is additionally categorized as a PCB Article and grouped as a PCB Item. As a result, regulations that apply to electrical equipment, PCB Articles, or PCB Items could apply to a capacitor containing PCBs.

Step 4 Find the group and category in Figure 2-1 that most closely describes your PCB materials. Use the definitions in the text of Section 2.2 to confirm this classification. For PCB Items, pay careful attention to whether or not the material has had direct contact with PCBs when determining the appropriate category(ies).

Example: PCB gaskets are not depicted in Figure 2-1; however, they are manufactured items known to contain PCBs. Figure 2-1 indicates that such PCB materials could be included in the same category as pumps, pipes, electrical equipment, hydraulic systems, and other manufactured items containing PCBs (i.e., the PCB Article category). Figure 2-1 also shows that PCB Articles belong to the PCB Items group. The definitions of PCB Item and PCB Article in Section 2.2 support this categorization of PCB gaskets. As a result, regulations that apply to PCB Items and PCB Articles could apply to PCB gaskets.

2.3 IS THE MATERIAL TO BE MANAGED AS A WASTE?

Unlike RCRA, TSCA regulates both PCB wastes and PCB materials in use. However, the TSCA regulatory requirements often differ for waste and non-waste PCB material. The TSCA regulations at 40 CFR 761.3 define PCB waste(s) as those PCBs and PCB Items that are subject to the disposal requirements of Subpart D of 40 CFR Part 761, "Storage and Disposal." The individual chapters of this guidance will assist you in determining whether your PCB material is subject to Subpart D of 40 CFR Part 761.

For the purposes of answering this preliminary question, however, PCB wastes are any PCBs or PCB Items that are no longer in use or no longer fit for service. Unless PCBs or PCB Items in storage are specifically stored for an identified use or reuse, they are also considered PCB waste.

PCB materials that are in use or are reasonably expected to be used in the future are not considered PCB waste. This guidance uses the term "non-waste PCB materials" to describe PCB materials in use and those expected to be used in the future.

2.4 WHAT IS THE CONCENTRATION OF PCBs IN THE MATERIAL?

The TSCA PCB regulations require a knowledge of the concentration of the PCBs involved. Most frequently, you must determine which of the following categories of PCB concentration applies: < 50 ppm, 50 to 499 ppm, or ≥ 500 ppm. This knowledge may require that the PCBs or PCB Item be sampled and tested. Other means of determining the PCB concentration in the material may include reference to manufacturers' literature, machine identification plates, knowledge of its service history, or knowledge of similar equipment.

The three concentration categories of PCBs and PCB Items are often subject to different regulatory requirements under TSCA, particularly for storage and disposal. PCB materials with PCB concentrations of ≥ 50 ppm are stringently regulated; those with PCBs at concentrations of < 50 ppm must meet minimal requirements.

Caution

Although PCB materials that have been found to have a PCB concentration between 2 ppm (the limit of detection for PCBs in oil) and 49 ppm are not regulated to the same extent as PCB materials with higher concentrations of PCBs, they are not totally exempt from regulation. PCB managers should consult the relevant chapters in this manual to determine which regulations apply, if any.

In addition, PCB materials with PCB concentrations of < 50 ppm as a result of dilution may be regulated as if they have a PCB concentration of ≥ 50 ppm.

The remainder of this section will help PCB managers determine the proper concentration category for their PCB materials.

2.4.1 ASSUMPTIONS ABOUT PCB CONCENTRATIONS

In certain cases, assumptions may be made about the PCB concentration of a material to avoid the expense of sampling and analysis. In other cases, depending upon the type of PCB Item, the material must be assumed to have a certain PCB concentration. This section discusses these assumptions about PCB concentration. Before proceeding with this section, review the TSCA definitions of "PCB Transformer," "PCB-contaminated Electrical Equipment," "Mineral Oil PCB Transformer," and "PCB-contaminated Transformer."

Transformers must be assumed to have a PCB concentration of ≥ 500 ppm (i.e., must be classified as PCB Transformers) if the fluid has not been tested for the PCB concentration [44 *Federal Register* 31517] and if:

- The transformer's nameplate or any other labeling indicates that the transformer contains PCB dielectric fluid; or
- Dielectric fluids with a PCB concentration of ≥ 500 ppm are known or suspected to have been added to the transformer.

In addition, it is EPA policy that transformers must be assumed to be PCB Transformers (i.e., assumed to have a PCB concentration of ≥ 500 ppm) if either of the following conditions exist:

- The transformer does not have a nameplate, has not been tested to determine PCB concentration, and there is no information available to indicate the type of dielectric fluid in it; or
- The transformer is a mineral oil transformer, has not been tested, and reasons exist to believe that the transformer was filled with dielectric fluid with a PCB concentration of ≥ 500 ppm.

EPA is considering amending the definition of PCB Transformer at 40 CFR 761.3 to include these assumptions [56 *Federal Register* 26741].

PCB-contaminated Electrical Equipment is defined at 40 CFR 761.3 as any PCB Electrical Equipment that contains PCBs at a concentration of ≥ 50 ppm but < 500 ppm. Mineral oil-filled electrical equipment (except circuit breakers, reclosers, and cable) that has an unknown PCB concentration must be assumed to be PCB-contaminated Electrical Equipment [40 CFR 761.3]. If there is a reason to believe a transformer contains PCB dielectric fluid with a concentration of ≥ 500 ppm or is considered to have a concentration of ≥ 500 ppm as the result of the Anti-dilution Rule (see Section 2.4.2), it must be classified as a Mineral Oil PCB Transformer. *Note that EPA allows a transformer with unknown PCB concentration to be classified as PCB-contaminated Transformer (i.e., 50 to 499 ppm) only if the transformer contains mineral oil dielectric fluid of unknown PCB concentration. Other transformers with unknown PCB concentrations are assumed to be PCB Transformers (i.e., ≥ 500 ppm). If a transformer contains, or has been serviced with, mineral oil dielectric fluid of a PCB concentration known to be ≥ 500 ppm, it is classified as a Mineral Oil PCB Transformer (i.e., ≥ 500 ppm).*

Figure 2-3 illustrates how to classify a transformer by PCB concentration, even if the PCB concentration is not known.

In cases where materials are contaminated with PCBs as the result of a spill or in situations where they may have come into contact with PCB materials that have a concentration of ≥ 50 ppm, the contaminated materials are regulated as if they contain the PCB concentration of the spilled materials. Refer to Chapter 12, "Spill Reporting and Cleanup," for guidance on handling materials contaminated by spills.

For regulatory purposes, used oil that is burned as fuel is presumed to contain PCBs at a concentration of ≥ 2 ppm, unless PCB analyses can document that the used oil fuel does not contain detectable levels of PCBs (i.e., < 2 ppm). Burning used oil as fuel is discussed in detail in Chapter 13, "Burning of Used Oil for Energy Recovery."

Caution

Owners of PCB Articles that are assumed to have a certain PCB concentration should consider verifying the PCB concentration prior to disposal. PCB Articles assumed to have a certain PCB concentration that are later tested and found to be in a higher concentration category are still subject to all requirements of the higher concentration category.

If no PCBs are detected (i.e., not detected at a detection level of 2 ppm PCB), this should be documented to avoid future CERCLA liability upon disposal.

Figure 2-3
CLASSIFICATION OF LIQUID-FILLED TRANSFORMERS

2.4.2 THE ANTI-DILUTION RULE

The deliberate dilution of PCB materials assumed to contain PCBs at a concentration of ≥ 50 ppm with PCB-free materials or low-concentration PCBs to reduce the concentration of PCBs in the resultant mixture below 50 ppm is **prohibited**. Any material that has been diluted is considered to have the original concentration of PCBs for the purposes of the TSCA regulations, unless specifically provided otherwise [40 CFR 761.1(b)]. There are two exceptions to this rule:

- For reclassification purposes, 40 CFR 761.30(a)(2)(v) allows dielectric fluid from PCB Transformers to be drained and the PCB Transformers refilled with non-PCB dielectric fluid. Although residual PCB dielectric fluid is expected to remain in the transformer and contaminate the dielectric fluid used to service it, this practice is not considered dilution, and the PCB Transformers may be reclassified to PCB-contaminated Transformers (50 to 499 ppm) or non-PCB Transformers (< 50 ppm), depending on the results of the required analysis performed after three months of in-service use. Read Chapter 4, "Servicing Equipment," for more details.
- The TSCA regulations at 40 CFR 761.79 allow for the decontamination of PCB Containers and movable equipment used in storage areas. See Chapter 12 for details.

In areas where contamination is discovered that occurred prior to May 4, 1987, the effective date of the PCB Spill Cleanup Policy, the Anti-dilution Rule is still in effect. If the original PCB concentration of the source of the release is unknown, some EPA Regions may require you to assume that the source was ≥ 500 ppm PCBs. Refer to Chapter 12, "Spill Reporting and Cleanup," for more information about spills and releases of PCBs.

2.4.3 THE MIXTURE RULE

The deliberate addition of PCBs to other materials or to lower-concentration PCB materials in order to place the mixture in a lower-concentration regulatory category is **prohibited**. For example, dielectric fluids known or assumed to have a PCB concentration of ≥ 500 ppm are prohibited from being collected in a common container with dielectric fluids known or assumed to have a PCB concentration of < 500 ppm; also, dielectric fluids of ≥ 50 ppm are prohibited from being collected in a common container with those of < 50 ppm. If PCB wastes with a PCB concentration of ≥ 500 ppm were added to a container of PCBs at a concentration of < 500 ppm, the resultant mixture would be regulated as if it contained PCBs at a concentration of ≥ 500 ppm, even if analysis of the mixture reveals a concentration of < 500 ppm [44 *Federal Register* 31514].

2.4.4 SAMPLING

TSCA regulations provide a sampling procedure (see box below) for the purpose of determining PCB concentration in mineral oil dielectric fluid electrical equipment [40 CFR 761.60(g)(1)]. Representative samples to determine PCB concentration may be taken from either common containers where mineral oil dielectric fluid is collected (see Chapter 4, "Servicing Equipment") or from an individual piece of electrical equipment.

Clarification

Representative Samples

Representative samples must either be taken in accordance with the American Society for Testing Materials (ASTM) Method ASTM D923-91 (ASTM 1991a) or, if taken from a common container, the container must be thoroughly mixed to distribute the PCBs uniformly throughout the liquid in the container [40 CFR 761.60(g)(1)(ii) and 40 CFR 761.60(g)(2)(ii)].

Mixing is used to assure a representative sample of the portion containing PCB primarily for drums containing 100% oil. It should be noted that PCBs may not be diluted to avoid treatment standards or reduce concentrations. This stipulation can have an impact if a drum contains a large volume of water and some oil. The oil phase would contain nearly all of the PCBs. Sampling should include only the oil phase, in this case, since that is where the PCBs are concentrated.

Please note the following exceptions to the sampling provision above:

- Mineral oil that is assumed or known to contain PCBs at a concentration of ≥ 50 ppm must not be mixed with mineral oil that is known or assumed to contain PCBs at a concentration of < 50 ppm to reduce the concentration of PCBs in a common container [40 CFR 761.60(g)(1)(i)].
- The entire contents of a common container containing dielectric fluid from untested, oil-filled circuit breakers, reclosers, or cable and other untested, oil-filled electrical equipment must be considered to contain PCBs at a concentration of ≥ 50 ppm, unless all of the fluid from the other oil-filled electrical equipment has been tested and shown to contain PCBs at a concentration of < 50 ppm [40 CFR 761.60(g)(1)(i)].

- If any PCBs at a concentration of ≥ 500 ppm have been added to the common container or equipment, then the total container contents must be considered to have a PCB concentration of ≥ 500 ppm [44 *Federal Register* 31518].

Owners or users of waste oil (see Glossary) may also take representative samples from either common containers where waste oil is collected or from individual electrical equipment to determine the PCB concentration [40 CFR 761.60(g)(2)]. The following exceptions apply:

- If any PCBs at a concentration of ≥ 500 ppm have been added to the container or equipment, then the total container contents must be considered to have a PCB concentration of ≥ 500 ppm [40 CFR 761.60(g)(1)(ii)].
- If waste oil from more than one source is collected in a common container, no other chemical substances or mixtures (e.g., non-waste oils) may be added to the container [40 CFR 761.60(g)(2)(i)].

2.4.5 ANALYSIS

Several analytical methods are available for determining PCB concentration. Figure 2-4 illustrates these test methods by matrix (e.g., oil, water, soil/sediments, and air). Method 8080 in the EPA document "Test Methods for Evaluating Solid Wastes" (SW-846) for analyzing PCB concentration is generally recommended for use in analyzing PCB material; however, other verifiable scientific methods are also available for use. SW-846 is often verbally recommended by the EPA Regions. The Third Edition of SW-846 and its Revision are available from the U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402, at (202) 738-3238 (Document No. 955-001-00000-1). Two update packages of the SW-846 methods have been released to the general public through the Government Printing Office (GPO). These update packages are: a final version of Update 1 (not formally promulgated in the *Federal Register*) and proposed Update 2 (not formally proposed in the *Federal Register*), both dated November 1990. Information on the status of these updates and how to obtain copies is available from EPA's Office of Solid Waste Methods Information Communication Exchange (MICE) Service at (703) 821-4789.

For determining the PCB concentration of transformer fluid and waste oils, EPA recommends "Test Method: The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils" (EPA/600/4-81/045) (Bellar and Lichtenberg 1982); this method is available upon request from the TSCA Hotline at (202) 554-1404.

Consult with the appropriate EPA Region to determine whether there are Regional preferences for one or another of these analytical methods.

If test results are close to one of the cut-off points for a concentration category (i.e., if the result of analysis shows a concentration close to 50 ppm or 500 ppm) persons subject to the TSCA regulations are expected to exercise good judgement regarding decisions about concentration category by considering the level of accuracy of the analysis method. For example, if an analysis using a method with an accuracy of plus or minus 15 ppm results in a value of 45 ppm, the PCB manager must either test the material using a more accurate analytical procedure, or treat the PCB material as if it contained PCBs at concentrations of ≥ 50 ppm. PCB managers must evaluate test results conservatively. The PCB manager would not have exercised good judgement if the PCB material, initially analyzed at a value of 45 ppm, was assumed to contain a PCB concentration of < 50 ppm without further testing.

In another example, suppose that 3 samples of liquid PCBs are taken from the same piece of equipment. The test results show that 2 of the samples have a PCB concentration of < 50 ppm, but 1 sample is found to contain PCBs at a concentration of ≥ 50 ppm. The determination of the regulatory status for materials that have been analyzed but where the analysis results in situations such as the one described in this example must be made on a case-by-case basis. Some facilities have instituted best management practices (BMPs) that address such situations by taking a conservative interpretation of the results of the analysis. If there is no such BMP in place at your facility, consult the EPA Region for guidance. In cases where a justification can be made that the sampling or analysis is of questionable validity, (e.g., due to improper quality assurance/quality control), consider making a conservative interpretation of test results.

See also, "DOE Methods for Evaluating Environmental and Waste Management Samples" (DOE 1993). This document provides analytical methods that have been developed or modified for use in analyzing radioactive, mixed waste, and other samples, including samples that may contain PCBs.

Figure 2-4
ANALYTICAL METHODS FOR PCBs

Matrix	Method	GC ¹	GC/MS ²	GC/ECD ³	Detection Limit ⁴	Quantification Limit ⁵
Oil	EPA-600/4-81-045 ⁶	Yes			< 2 ppm	2 ppm
	ASTM D4059 ⁷	Yes			< 2 ppm	2 ppm
Soil/Sediment	8080 (SW-846) ⁸			Yes	Not given	Not given
	Method 608 ⁹	Yes			0.1-0.5 ppb	80 ppb
	Method 680 ¹⁰		Yes		~ 100 ppb	1 ppm
Water	EPA Method 505 ¹¹ (Microextraction)	Yes			0.1-0.5 ppb (based on the Arochlor present)	Not given
	Method 508A ¹¹ (Perchlorination)				0.1-0.5 ppb (as decachlorobiphenyl)	Not given
	Method 608 ⁹	Yes			0.1-0.5 ppb	0.5 ppb
	Method 680 ¹⁰		Yes		~ 100 ppb	1 ppm
Air	NIOSH Method 5503 ¹² Florosil sorbent, hexane extraction			Yes	~ 1 ug/m ³ (in an air sample of 50 liters)	Not given

1. Gas chromatograph
2. Gas chromatograph/mass spectrometer
3. Gas-liquid chromatography with electron capture detection
4. Detection limit indicates the concentration above which the presence of PCBs will be detected by the analytical method
5. Quantification limit indicates the concentration above which the quantity of PCBs present can be determined

6. Bellar and Lichtenberg 1982.
7. ASTM 1991a.
8. USEPA 1986.
9. 40 CFR Part 136, Appendix A
10. Alford-Stevens, et al. 1985.
11. USEPA 1988.
12. Eller 1984.

2.5 IS THE PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE?

PCB waste by itself is not a hazardous waste as defined under RCRA. It is not uncommon, however, to find PCBs mixed with or otherwise contained in wastes that are listed as hazardous in Subpart D of 40 CFR Part 261 or for a PCB-containing mixture to exhibit one or more of the characteristics of hazardous waste identified in Subpart C of 40 CFR Part 261 (i.e., ignitability, corrosivity, reactivity, or toxicity).

Examples of PCB waste mixed with RCRA hazardous waste include:

- A rinsate generated when a transformer that contained PCBs is flushed with a solvent listed at 40 CFR 261.31 (i.e., an F-listed solvent). The resulting PCB-containing mixture would be a listed hazardous waste regardless of concentration. *When flushing PCB-containing equipment you should consider using a non-RCRA solvent (i.e., a solvent that does not appear in 40 CFR Part 261).*
- Soil contaminated with PCBs and a characteristic waste, such as one or more of the toxicity characteristic contaminants identified at 40 CFR 261.24. If the concentration of any of the toxicity characteristic contaminants exceeds the regulatory levels identified at 40 CFR 261.24, the soil would be considered hazardous under RCRA.

Clarification

Dielectric Fluids Are Exempt from the Toxicity Characteristic Rule

EPA has exempted waste PCB-containing dielectric fluids from electrical transformers, capacitors, and associated PCB-contaminated electrical equipment from the Toxicity Characteristic (TC) Rule published at 55 *Federal Register* 11841. This means that such wastes are not considered hazardous under RCRA even though they may contain TC constituents such as chlorinated benzenes. However, the exemption applies only to those dielectric fluids that are fully regulated by TSCA. Other PCB-containing wastes that are hazardous (i.e., listed or characteristic) are subject to all applicable RCRA standards.

It is beyond the scope of this guidance to discuss the characterization of hazardous waste under RCRA, which is found at 40 CFR Part 261. Refer to the EH-231 guidance manual "Definitions of Solid and Hazardous Waste" (USDOE 1992a) for additional information. Two information briefs, "Overview of the Identification of Hazardous Waste Under RCRA" (USDOE 1991a) and "Identification of Certain RCRA Wastes--The F-Spent Solvent, P, and

U Listings" (USDOE 1991b), may also help. If PCBs are mixed with a RCRA hazardous waste, the material must be managed in compliance with applicable requirements under both TSCA and RCRA. Where TSCA and RCRA requirements conflict, the TSCA regulations at 40 CFR 761.1(e) provide that the more stringent requirement applies.

2.6 IS THE PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS?

PCB material that is contaminated with radioactive constituents is subject to the requirements of the Atomic Energy Act (AEA) as implemented by the Nuclear Regulatory Commission (NRC) and applicable DOE orders, in addition to TSCA. For example, containers of PCB waste that are contaminated with radioactive constituents would be subject to the marking requirements for PCB waste as well as any marking requirements for radioactive materials under the AEA or DOE orders. When PCBs are contaminated with RCRA regulated hazardous constituents and radionuclides, the resultant material is RCRA/TSCA/NRC regulated. It is DOE policy to comply with the letter and spirit of applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health [DOE Order 5400.1].

DOE Order 5400.5, "Radiation Protection of the Public and the Environment," DOE Order 5480.2, "Hazardous and Radioactive Waste Management," and DOE Order 5820.2A, "Radioactive Waste Management," provide a roadmap to the regulations for radioactive materials.

In addition, two guidance manuals, "Joint EPA/NRC Guidance on the Definition of Commercial Mixed Low-Level Radioactive and Hazardous Waste" (USEPA 1989) and "Radioactive Waste Processing and Disposal" (NRC/USDOE 1980) may be of help. *When using these documents, however, be aware that the term "mixed" is used to describe radioactively contaminated hazardous wastes, not RCRA/TSCA regulated wastes.*

The following statutes and regulations may also apply:

- The Low-Level Radioactive Waste Policy Amendment Act of 1985 [PL-99-240];
- 10 CFR Part 962, "Byproduct Material"; and
- 40 CFR Part 191, "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Waste."

The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)]. In general, where regulations conflict, the more stringent rule applies. If compliance with all applicable regulations would be dangerous or impossible, refer to DOE Order 5400.2A, "Environmental Compliance Issue Coordination," which sets forth DOE policy, direction, and procedures for coordinating environmental issues that are of significance to DOE, i.e., that have the potential of setting a precedent or being controversial.

Under some circumstances, DOE may resolve conflicts between the TSCA requirements for PCB waste and DOE order requirements for radioactive material by conditionally waiving the conflicting DOE order requirements (USDOE 1992b). For example, DOE's Office of Environment, Safety, and Health may release soil contaminated with both PCBs and radioactive constituents from DOE radiological control as specified in DOE Order 5400.5 if the DOE site:

- Meets soil limits (i.e., authorized limits) derived consistent with the requirements of DOE Order 5400.5 and associated guidance materials,
- Meets the stated concentration limit for certain radioactive elements,
- Employs the As Low As Reasonably Achievable (ALARA) process in the selection of release criteria, and documents and applies the ALARA process consistent with the requirements of DOE Order 5400.5, and
- Conforms to the requirements of the CERCLA process, applicable NEPA requirements, and appropriate requirements of DOE Order 5400.5 for state and local coordination.

In addition, if PCB waste contaminated with radioactive constituents is sent to a commercial disposal facility, it must meet the acceptance criteria for that facility and any other appropriate state or local acceptance criteria.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may cause criticality to be a concern if the PCB wastes are contaminated with certain radioactive constituents.

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CHAPTER 3
PROHIBITED AND AUTHORIZED
ACTIVITIES

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3.1 INTRODUCTION

This chapter covers the requirements of Subpart B of 40 CFR Part 761, which discusses prohibited and authorized activities involving PCB materials (i.e., use, manufacture, import, process, distribution in commerce, and export).

Several types of PCB materials are conditionally exempt from the requirements of Subpart B of 40 CFR Part 761 but are subject to other TSCA requirements governing PCB activities. The Master Flow Chart for this chapter helps the reader identify these PCB materials and determine which additional requirements, if any, concerning PCB activities apply.

This chapter does not cover authorizations, prohibitions, or other restrictions or requirements in the TSCA regulations for servicing PCB-containing equipment in use, although these regulations are also located in Subpart B of 40 CFR Part 761. All regulations relating to servicing equipment in use are covered in Chapter 4, "Servicing Equipment."

Prohibitions and authorizations for used oil burned for energy recovery are discussed in Chapter 13, "Burning of Used Oil for Energy Recovery."

Most PCBs and PCB Items stored for use or reuse are regulated as if they are in use. That is, these materials are subject to all the restrictions and authorizations that apply to PCBs and PCB Items in use, as described in this chapter. To determine whether your PCB materials stored for use or reuse are regulated as if they are in use, read the Master Flow Chart for Chapter 7, "Storage." If the flow chart indicates that this is the case, your PCBs and PCB Items stored for use or reuse are subject to the TSCA use restrictions and authorizations discussed in this chapter. Requirements for and restrictions on storage for disposal and disposal of PCBs and PCB Items are discussed in Chapter 7, "Storage," and Chapter 9, "Disposal," respectively.

DOE Personnel should refer to this chapter before engaging in any PCB activities or to verify that the facility's activities are in compliance with applicable regulations. If PCBs or PCB Items are in use, DOE Personnel should also read Chapter 4, "Servicing Equipment."

3.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

3.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Commerce,
- Distribute in commerce,
- Excluded manufacturing process,
- Excluded PCB products,
- Impurity,
- Inadvertently generated PCBs,
- Manufacture,
- Manufacturing process,
- Process,
- Recycled PCBs, and
- Totally enclosed manner.

When confronted with an unfamiliar term, consult the Glossary.

3.2.2 GENERAL BAN ON USE, MANUFACTURE, PROCESS, AND DISTRIBUTION IN COMMERCE

TSCA Section 6(e)(2) **prohibits** the use, manufacture, process, and distribution in commerce of any PCB other than in a "totally enclosed manner," except to the extent that EPA authorizes activities in a non-totally enclosed manner. To authorize an activity, EPA must find that continuation of the activity does not present an unreasonable risk of injury to human health or the environment. Since the intent of TSCA is for PCB activities to be banned, it must be clearly evident that the risk from an activity is not unreasonable. In the absence of such evidence, an activity is **banned**.

TSCA Section 6(e)(3) **prohibits** the manufacture, process, and distribution in commerce of PCBs except to the extent that EPA specifically exempts such activities. To grant an exemption for an activity, EPA must determine (1) that an unreasonable risk to human health or the environment is not present, and (2) that good faith efforts have been made to develop substitutes for the PCBs used in the activity.

The differences between an authorization and an exemption are as follows [44 *Federal Register* 31529]:

- An authorization may be valid for any time period that EPA finds appropriate, but an exemption is only valid for one year and must be granted annually through a formal EPA rulemaking.
- EPA may propose to promulgate an authorization without a specific request from those who would benefit from the authorization. Exemptions must be petitioned for by those who would benefit from them.
- A use activity never needs an exemption and, therefore, must be either (1) totally enclosed or (2) not totally enclosed and authorized. Use activities that are not totally enclosed and are not authorized are **prohibited**.

3.2.3 THE "FIRES RULE"

On July 17, 1985, EPA issued regulations placing additional restrictions and conditions on the use of PCB Transformers, which are defined as having a PCB concentration of ≥ 500 ppm. This rule is commonly known as the "Fires Rule" [50 *Federal Register* 29170]. The requirements imposed by the Fires Rule are discussed in detail within each module of this chapter, as appropriate. Because many questions have been raised by DOE Personnel about the Fires Rule, it is summarized below:

- The use of higher secondary voltage (480 volts and above) network PCB Transformers in or near commercial buildings after October 1, 1990, is **prohibited**.
- The installation of enhanced electrical protection on lower secondary voltage network PCB Transformers and higher secondary voltage radial PCB Transformers in use in or near commercial buildings was required by October 1, 1990.
- Installation of PCB Transformers in or near commercial buildings after October 1, 1985, is **prohibited**.
- All PCB Transformers in use in or near commercial buildings must have been registered with fire response personnel and building owners prior to December 1, 1985.
- The exterior of all PCB Transformer locations must have been marked by December 1, 1985. (See Chapter 6, "Marking.")
- Combustible materials must not be stored within 5 meters of a PCB Transformer's enclosure or within 5 meters of an unenclosed PCB Transformer after December 1, 1985.
- Owners of PCB Transformers involved in fire-related incidents must immediately notify the National Response Center (NRC) and take appropriate measures to safely contain any potential releases to water of PCBs or incomplete combustion products of PCBs. (See Chapter 12, "Spill Reporting and Cleanup.")

3.2.4 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environment (EH-20) for instructions on how to proceed. EH-20 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue

Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

3.2.5 STATE REGULATIONS

The state in which the PCBs or PCB Items are located may have additional regulations that apply to the use, manufacture, process, or distribution in commerce of PCBs or PCB Items. State regulations are not specifically covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

EPA's Office of Toxic Substances conducted a telephone survey of the PCB programs and activities of all fifty states the District of Columbia, Puerto Rico, and the Virgin Islands in September and October, 1990. The results of this survey are compiled in a report, "Summary of State PCB Management Programs," available at no cost from the TSCA Hotline (202-554-1404). Appendix A of this guidance manual contains a table summarizing a portion of the state requirements discussed in the survey report.

3.2.6 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

The modules in this chapter describe the TSCA conditions on the use, manufacture, import, process, distribution in commerce, and export of PCBs and PCB Items. Normally, these activities would not lead to situations in which PCBs or PCB Items would become mixed with RCRA hazardous waste. However, if PCBs or PCB Items become mixed with RCRA hazardous waste, they are subject to:

- Applicable restrictions on activities involving RCRA hazardous waste, as described in 40 CFR 262-266, and 268;
- The Federal Facility Compliance Act, Pub. L.102-386;
- DOE Order 5400.1, "General Environmental Protection Program"; and
- DOE Order 5400.3, "Hazardous and Radioactive Mixed Waste Program."

If, as a result of contamination with RCRA hazardous waste, PCB material is no longer fit for service, it would no longer be considered in use and therefore must be disposed of. See Chapter 7, "Storage," for the TSCA requirements for PCB materials stored for disposal and Chapter 9, "Disposal," for the TSCA disposal requirements.

3.2.7 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

3.3 MASTER FLOW CHART: PROHIBITED AND AUTHORIZED ACTIVITIES

The flow chart and the supplemental information on the following pages will help you identify prohibited and authorized activities involving PCB materials.

MASTER FLOW CHART: PROHIBITED AND AUTHORIZED ACTIVITIES
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: PROHIBITED AND AUTHORIZED ACTIVITIES

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers prohibited and authorized activities involving PCBs and PCB Items.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 3.2, "General Requirements and Considerations," which contains information about the requirements that could apply to activities (i.e., use, manufacture, process, distribution in commerce, import, and export) involving any PCBs or PCB Items.

Note that the importation of PCBs or PCB Items is considered to be "manufacture" for the purposes of 40 CFR Part 761, according to 40 CFR 761.3.

Step 2 **Is your PCB material exempt?** The following PCBs and PCB Items are conditionally exempt from the restrictions and conditions of Subpart B of 40 CFR Part 761:

- Inadvertently manufactured or imported PCBs generated as unintentional impurities in excluded manufacturing processes [40 CFR 761.1(f)(1)],
- Products containing PCBs generated in excluded manufacturing processes [40 CFR 761.1(f)(2)],
- Products containing recycled PCBs [40 CFR 761.1(f)(3)], and
- Products containing excluded PCB products, i.e., materials with PCB concentrations of < 50 ppm (except for used oil burned for energy recovery) [40 CFR 761.1(f)(4)].

However, to qualify for an exemption from Subpart B, these eligible PCB materials must meet the TSCA requirements described in Module 3A [40 CFR 761.1(f)]; if they do not, they are subject to the restrictions and conditions described in Modules B through E, as appropriate. Refer to the box on the next page for a discussion of the terms used in the four bullets, above.

PCBs and PCB Items that do not meet the descriptions of the four bullets, above, should proceed to Step 3.

Clarification

**PCBs Manufactured in an Excluded Manufacturing Process,
Excluded PCB Products, and Recycled PCBs**

According to 40 CFR 761.3, PCBs are considered PCBs manufactured in an "excluded manufacturing process," if they are:

- "Inadvertently manufactured PCBs," or
- Imported PCBs generated as unintentional impurities.

"Excluded PCB products" means PCB materials that appear at concentrations of < 50 ppm PCBs, including but not limited to:

- (1) Non-Aroclor, inadvertently generated PCBs as a byproduct or impurity resulting from a chemical manufacturing process;
- (2) Products contaminated with Aroclor or other PCB materials from historic PCB uses (e.g., investment casting waxes);
- (3) Recycled fluids and/or equipment contaminated during use involving the products described in (1) and (2) (e.g., electrical equipment components and fluids); and
- (4) Used oils;

Provided that in the cases of paragraphs (1) through (4) of this definition:

- The products or source of the products containing PCBs at concentrations of < 50 ppm were legally manufactured, processed, distributed in commerce, or used before October 1, 1984.
- The products or source of the products containing PCBs at concentrations of < 50 ppm were legally manufactured, processed, distributed in commerce, or used (pursuant to authority granted by EPA regulation, by exemption petition, by settlement agreement, or pursuant to other EPA-approved programs).
- The resulting PCB concentration (i.e., below 50 ppm) is not a result of dilution, or leaks and spills of PCBs in concentrations over 50 ppm.

"Recycled PCBs" means those PCBs that appear in the processing of paper products or asphalt roofing materials from PCB-contaminated raw materials.

Step 3 **What PCB activities are of interest to you?** The remainder of this chapter covers the restrictions placed on PCB activities by the TSCA regulations at Subpart B of 40 CFR Part 761. The following types of activities are discussed:

- Use and storage for reuse (Module 3B),
- Manufacture and import (Module 3C),
- Process and distribution in commerce (Module 3D), and
- Export (Module 3E).

3.4 MODULE 3A: PCB MATERIALS EXEMPTED FROM SUBPART B

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 3.3 to arrive at Module 3A.

Reminder

PCBs and PCB Items → Exempt from Subpart B → Module A

Several types of PCB materials are conditionally exempt from the requirements of Subpart B of 40 CFR Part 761 but are subject to other TSCA requirements governing PCB activities. These conditionally exempt PCBs and PCB Items are discussed in the following sections of this module:

- Section 3.4.1 Excluded PCB Products,
- Section 3.4.2 Recycled PCBs, and
- Section 3.4.3 PCBs Manufactured in an Excluded Manufacturing Process.

If the conditions for exemption that are described in this module are not met, these PCBs and PCB Items are subject to the requirements at Subpart B of 40 CFR Part 761, as described in Modules B through E of this chapter.

DOE Personnel should be aware that any more stringent regulations issued under EPA authorities, or any permit conditions or pretreatment requirements issued by EPA, a state, or local government that affect the release of PCBs to any medium would supersede these exemptions [40 CFR 761.1(f)].

3.4.1 EXCLUDED PCB PRODUCTS

Persons who **process, distribute in commerce, or use** products containing PCBs at concentrations of < 50 ppm (i.e., excluded PCB products) are exempt from the prohibitions and authorization requirements of Subpart B of 40 CFR Part 761 [40 CFR 761.1(f)(4)].

Provided that all applicable conditions of 40 CFR 761.1(f), as described in Step 2 of the Supplemental Information to the Master Flow Chart for this chapter are met:

- An exemption is not required to **process or distribute in commerce** excluded PCB products [40 CFR 761.20(c)]; and
- An authorization is not required to **use** excluded PCB products or those PCB Items that contain or have been in contact with excluded PCB products [40 CFR 761.20(a)(1) and (a)(3)].

In addition, an authorization is not required to **apply sewage sludges to land**, if they are contaminated with PCBs at concentrations of < 50 ppm and regulated by authorities under the Clean Water Act and the Resource Conservation and Recovery Act [40 CFR 761.20(a)(4)].

An authorization is not required to **import** excluded PCB products for purposes of disposal [40 CFR 761.20(b)(2)]. Refer to Chapter 7, "Storage," and Chapter 9, "Disposal," for a discussion of the storage and disposal regulations that apply to PCBs at concentrations of < 50 ppm.

3.4.2 RECYCLED PCBs

The term "recycled PCBs" has a very specific meaning, which is defined at 40 CFR 761.3. (Refer to the Glossary for a full definition.) The term as defined by the TSCA regulations is not to be confused with PCBs that may be reused as a result of processing or reprocessing.

Persons who **process, distribute in commerce, or use** products containing recycled PCBs are exempt from the prohibitions and authorization requirements of Subpart B of 40 CFR Part 761, provided that:

- Such persons comply with applicable TSCA recordkeeping and reporting requirements as described in Chapter 10, "Recordkeeping and Reporting." In addition, the monitoring records described at 40 CFR 761.193 must be kept for recycled PCBs [40 CFR 761.1(f)(3)].
- Processes that recycle PCBs meet the following requirements, which are included in the regulatory definition of "recycled PCBs" [40 CFR 761.3]:
 - There must be no detectable concentrations of PCBs in asphalt roofing material products leaving a processing site.

- The concentration of PCBs in paper products leaving any manufacturing site processing paper products or imported into the United States must have an annual average of < 25 ppm with a 50 ppm maximum.
- The release of PCBs at the point at which emissions are vented to ambient air must be < 10 ppm.
- The amount of Aroclor PCBs added to water discharged from an asphalt roofing processing site must at all times be < 3 micrograms per liter (micro-g/L) for total Aroclors, i.e., 3 ppb. Water discharges from the processing of paper products must at all times be < 3 micrograms per liter (micro-g/L) for total Aroclors, i.e., roughly 3 ppb, or comply with the equivalent mass-based limitation.
- Disposal of any other process wastes at PCB concentrations of ≥ 50 ppm must be in accordance with the storage for disposal and disposal requirements in Subpart D of 40 CFR Part 761 (see Chapter 7, "Storage," and Chapter 9, "Disposal").

Provided that all applicable conditions of 40 CFR 761.1(f), as described in Step 2 of the Supplemental Information to the Master Flow Chart for this chapter, are met:

- An authorization is not required to **use** recycled PCBs [40 CFR 761.20(a)(2)].
- An exemption is not required to **process or distribute in commerce** recycled PCBs [40 CFR 761.20(c)].

3.4.3 EXCLUDED MANUFACTURING PROCESSES

PCBs are considered manufactured in an excluded manufacturing process, as defined by 40 CFR 761.3, if they are **inadvertently manufactured PCBs or imported PCBs** generated as **unintentional impurities** and meet the following condition:

- The concentration of inadvertently generated PCBs in products leaving any manufacturing site or imported into the United States is ≤ 50 ppm and averages, on an annual basis, < 25 ppm.

PCBs inadvertently **manufactured in the United States** must meet the following additional conditions for the PCBs to be considered manufactured in an excluded manufacturing process [40 CFR 761.3]:

- The concentration of inadvertently generated PCBs at the point at which emissions are vented to ambient air must be < 10 ppm.

- The amount of inadvertently generated PCBs added to water discharged from a manufacturing site must be < 100 micrograms per resolvable gas chromatographic peak per liter of water discharged.

Clarification

Determination of the Quantity of Inadvertently Generated PCBs

If it is necessary to determine the quantity of inadvertently generated PCBs, add the quantity of monochlorinated biphenyls divided by 50 and the quantity of dichlorinated biphenyls divided by 5 [40 CFR 761.3]. *The units used in this equation must be the same for each input value.*

$$\frac{\text{Monochlorinated biphenyls}}{50} + \frac{\text{Dichlorinated biphenyls}}{5} = \text{Quantity of inadvertently generated PCBs}$$

Disposal of any other process wastes containing PCBs at a concentration of ≥ 50 ppm must be in accordance with Subpart D of 40 CFR Part 761. Disposal of PCBs and PCB Items is addressed in Chapter 9, "Disposal."

Persons who **inadvertently manufacture or import** PCBs generated as unintentional impurities in excluded manufacturing processes and persons who **process, distribute in commerce, or use** products containing PCBs generated in excluded manufacturing processes are exempt from the prohibitions and authorization requirements of Subpart B of 40 CFR Part 761. This exemption is conditional upon the following [40 CFR 761.1(f)(1) and (f)(2)]:

- Reporting requirements are pursuant to the regulations at 40 CFR 761.185 for any excluded manufacturing process or imports for which the concentration of PCBs in products that leave the manufacturing site or are imported is > 2 micrograms per gram (2 micro-g/g, roughly 2 ppm) for any resolvable gas chromatographic peak [40 CFR 761.185(a)].
- The additional reporting requirements described at 40 CFR 761.187 are met.
- Monitoring records are maintained by persons who import or manufacture chemicals containing PCBs present as a result of inadvertent generation pursuant to the regulations at 40 CFR 761.193.

In addition, applicable requirements described in Chapters 6 through 14 of this guidance document must be met.

If all applicable conditions of 40 CFR 761.1(f)(1) and (f)(2) are met, as described above:

- An authorization is not required to **use** those PCBs or PCB Items resulting from an excluded manufacturing process [40 CFR 761.20(a)(2)];
- An exemption is not required to **process or distribute in commerce** PCBs or PCB Items resulting from an excluded manufacturing process [40 CFR 761.20(c)]; and
- An exemption is not required to **manufacture** PCBs in an excluded manufacturing process **for use** within the United States or to manufacture PCBs in an excluded manufacturing process **for export** from the United States [40 CFR 761.20(b)(1)].

3.5 MODULE 3B: USE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 3.3 to arrive at Module 3B.

Reminder

PCBs and PCB Items → Not exempt → Use and storage for reuse → Module B

The regulations described in this module apply to the use and storage for reuse of PCBs and PCB Items. PCB Items stored for use or reuse are considered to be in use under the TSCA regulations at 40 CFR Part 761.

Except as described in Module 3A, the use of any PCB or PCB Item is **prohibited**, regardless of concentration, unless the use is totally enclosed or authorized under 40 CFR 761.30, as described in this module [40 CFR 761.20(a)]. A totally enclosed manner is one that results in no exposure to PCBs for humans or the environment [40 CFR 761.3].

*PCBs and PCB Items are only authorized for use in very limited scenarios, as described in this module; unauthorized uses are **prohibited** and may result in a violation. When PCBs and PCB Items are discovered in unauthorized uses, they must be immediately removed from service and disposed of in accordance with the TSCA regulations at 40 CFR 761.60. Refer to Chapter 9, "Disposal," for a detailed explanation of the TSCA disposal requirements. PCBs used to service PCB Items in authorized PCB uses must be stored according to the requirements described in Chapter 7 "Storage."*

Prohibitions and use restrictions that apply to PCBs and PCB Items that are authorized under 40 CFR 761.30 are described in the following sections of this module:

- Section 3.5.1 Transformers,
- Section 3.5.2 Transformers in Railroad Locomotives or Self-propelled Railroad Cars
- Section 3.5.3 Capacitors,
- Section 3.5.4 Heat Transfer Systems and Hydraulic Systems,
- Section 3.5.5 Circuit Breakers, Reclosers, and Cable,
- Section 3.5.6 Electromagnets, Switches, and Voltage Regulators,
- Section 3.5.7 Compressors and Natural Gas Pipelines,

- Section 3.5.8 Small Quantities for Research and Development, and
- Section 3.5.9 Optical Liquids and Microscopy.

Regulatory Issue

Gaskets Contaminated with PCBs

During the 1940's and 1950's, the heating, ventilation, and air conditioning (HVAC) systems in some DOE facilities were constructed using adhesives and gaskets containing PCBs. This use of PCBs is not recognized by the current PCB regulations at 40 CFR Part 761, because EPA was unaware of it. EPA may now be considering allowing for the continued use of these gaskets and other pre-TSCA PCB applications through an amendment to the regulations at 40 CFR 761.30. The conditions for continued use of these materials would be determined by EPA but would likely include EPA notification of the discovery of these materials, marking requirements, air monitoring, recordkeeping, and storage and disposal requirements. In addition, if the PCB-impregnated gaskets leak, they would likely be required to be removed, replaced, or contained in a manner specified by EPA.

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MODULE 3B
3.5.1 Transformers

SUPPLEMENTAL INFORMATION FOR SECTION 3.5.1, TRANSFORMERS

- Step 1** **Start** -- PCBs at any concentration may be used in transformers (other than in railroad locomotives and self-propelled railroad cars), subject to the conditions described in Steps 2 through 7, as applicable.
- Step 2** Transformers (other than railroad transformers) must be serviced as specified at 40 CFR 761.30(a). Refer to Chapter 4, "Servicing Equipment," for details.
- Step 3** **What is the PCB concentration?** Transformers with a PCB concentration of < 500 ppm are subject to fewer use conditions than PCB Transformers (i.e., transformers with PCB concentrations of $\geq$ 500 ppm). If the concentration is < 500 ppm, proceed to Step 3A; otherwise, go to Step 4.
- Step 3A** No other restrictions apply to the use of transformers with PCB concentrations of < 500 ppm.
- Step 4** **Prohibited Activity:** For PCB Transformers that have been placed into storage for reuse or that have been removed from another location, installation in or near commercial buildings is prohibited [40 CFR 761.30(a)(1)(iii)].
- Step 5** **Prohibited Activity:** The use and storage for reuse of PCB Transformers that pose an exposure risk to food or feed is prohibited [40 CFR 761.30(a)(1)(i)]. *Do not use these transformers near cafeterias or food vending machine areas.*

MODULE 3B
3.5.1 Transformers (Continued)

Step 6 **Prohibited Activity:** Lower secondary voltage network PCB Transformers **located in sidewalk vaults** in use near commercial buildings must be removed from service by October 1, 1993 [40 CFR 761.30(a)(1)(iv)(D)].

Step 7 **Prohibited Activity:** Combustible materials, including, but not limited to, paints, solvents, plastics, paper, and sawn wood, must not be stored as follows:

- Within a PCB Transformer enclosure (i.e., in a transformer vault or in a partitioned area housing a transformer);
- Within 5 meters of a transformer enclosure; or,
- If unenclosed (i.e., unpartitioned), within 5 meters of a PCB Transformer [40 CFR 761.30(a)(1)(viii)].

Step 8 PCB Transformers in use in or near commercial buildings must be registered with building owners. For PCB Transformers located in commercial buildings, PCB Transformer owners must register the transformers with the building owner of record. For PCB Transformers located near commercial buildings, PCB Transformer owners must register the transformers with all owners of buildings located within 30 meters of the PCB Transformers [40 CFR 761.30(a)(1)(vii)]. The following information must be provided to building owners by PCB Transformer owners:

- The specific location of each PCB Transformer [40 CFR 761.30(a)(1)(vii)(A)];
- The principal constituent of the dielectric fluid in each transformer (e.g., PCBs, mineral oil, or silicone oil) [40 CFR 761.30(a)(1)(vii)(B)]; and
- The type of transformer installation. Some examples include 208/120-volt network, 280/120-volt radial, 208-volt radial, 480-volt network, 480/277-volt network, 480-volt radial, 480/277-volt radial transformers [40 CFR 761.30(a)(1)(vii)(C)].

Step 9 All PCB Transformers, including PCB Transformers in storage for reuse, must be registered with fire response personnel with primary jurisdiction (i.e., the fire department or fire brigade that would normally be called upon for the initial response to a fire involving the equipment) [40 CFR 761.30(a)(1)(vi)]. The following information must be provided to the fire response personnel:

- The address of the building and the physical location of each PCB Transformer on the building site, and for outdoor PCB Transformers, the location of the outdoor substation [40 CFR 761.30(a)(1)(vi)(A)];
- The principal constituent of the dielectric fluid in the transformer (e.g., PCBs, mineral oil, or silicone oil) [40 CFR 761.30(a)(1)(vi)(B)]; and
- The name and telephone number of the person to contact in the event of a fire involving the equipment [40 CFR 761.30(a)(1)(vi)(C)].

Regulatory Issue

Use of PCB Transformers

EPA is considering clarifying the restrictions on the use authorization at 40 CFR 761.30(a) for PCB Transformers. If a mineral oil transformer is assumed to have a PCB concentration of ≥ 50 ppm but < 500 ppm and is subsequently tested and found to contain PCBs at a concentration of ≥ 500 ppm, EPA may consider requiring the transformer to be registered with fire response personnel. If registration within the required timeframe cannot be demonstrated, then the PCB Transformer is not authorized for use and must be removed from service and disposed of in accordance with the regulations at 40 CFR 761.60 (see Chapter 9, "Disposal").

- Step 10** If a PCB Transformer is involved in a fire-related incident, the owner of the transformer must immediately report the incident to the National Response Center (1-800-424-8802; in Washington, DC, 202-426-2675) [40 CFR 761.30(a)(1)(xi)]. For more information about required procedures for PCB Transformers involved in a fire-related incident, see Chapter 12, "Spill Reporting and Cleanup," specifically Section 12.2.3.
- Step 11** A visual inspection of each PCB Transformer in use or stored for reuse must be performed at least once every 3 months [40 CFR 761.30(a)(1)(ix)]. For more information about inspections, see Chapter 5, "Inspecting PCB Items."
- Step 12** Records of the inspection and maintenance history of the PCB Transformer must be maintained at least 3 years after disposal of the transformer and must be made available for inspection upon request by EPA [40 CFR 761.30(a)(1)(xii)]. For more information about required recordkeeping, see Chapter 10, "Recordkeeping and Reporting."

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MODULE 3B
3.5.1 Transformers (Continued)

- Step 13** If a PCB Transformer is found to have a leak that results in any quantity of PCBs running off or about to run off the external surface of the transformer, the transformer must be repaired or replaced to eliminate the source of the leak [40 CFR 761.30(a)(1)(x)]. For more information about required procedures when a leak is discovered in a PCB Transformer, see Chapter 12, "Spill Reporting and Cleanup."
- Step 14** **Is the PCB Transformer a higher or lower secondary voltage transformer?** The TSCA regulations differentiate between PCB Transformers with a higher secondary voltage (i.e., a secondary voltage $\geq$ 480 volts) and those with a lower secondary voltage (i.e., a secondary voltage $<$ 480 volts) with respect to specific use conditions and restrictions. If your PCB Transformer is a transformer with a higher secondary voltage, including 480/277-volt systems, specific use conditions and restrictions are discussed in Step 15. If your PCB Transformer is a transformer with a lower secondary voltage, use conditions and restrictions are discussed in Step 16.
- Step 15** **Is the PCB Transformer a network transformer or a radial transformer?** Use conditions and restrictions for radial PCB Transformers are discussed in Steps 15A and 15B. Use conditions and restrictions for network PCB Transformers are presented in Steps 15C and 15D.
- Step 15A** **All higher secondary voltage radial PCB Transformers** (i.e., secondary voltages $\geq$ 480 volts, including 480/277-volt systems) in use in or near commercial buildings must be equipped with electrical protection to avoid transformer ruptures caused by high current faults [40 CFR 761.30(a)(1)(iv)].

Current-limiting fuses or other equivalent technology must be used to detect sustained high current faults and provide for the complete deenergization of the transformer within several hundredths of a second before transformer rupture occurs. The installation, setting, and maintenance of current-limiting fuses or other equivalent technology to avoid PCB Transformer ruptures from sustained high current faults must be completed in accordance with good engineering practices [40 CFR 761.30(a)(1)(iv)(A)].

- Step 15B** In addition, all higher secondary voltage radial PCB Transformers in use in or near commercial buildings must be equipped with protection to avoid transformer ruptures caused by sustained low current faults [40 CFR 761.30(a)(1)(v)].

Pressure and temperature sensors (or other equivalent technology that has been demonstrated to be effective in early detection of sustained low current faults) must be used in these transformers to detect sustained low current faults [40 CFR 761.30(a)(1)(v)(A)].

Disconnect equipment must be provided to insure the complete deenergization of the transformer in the event of a sensed abnormal condition (e.g., an overpressure or overtemperature condition in the transformer) caused by a sustained low current fault.

The disconnect equipment must be configured to operate automatically within 30 seconds to 1 minute of the receipt of a signal indicating an abnormal condition from a sustained low current fault. Alternatively, the disconnect equipment may be configured to allow for manual deenergization from a manned on-site control center upon the receipt

of an audio or visual signal indicating an abnormal condition caused by a sustained low current fault. Manual deenergization from a manned on-site control center must occur within 1 minute of the receipt of the audio or visual signal. For the regulatory definition of "on-site" and "manned control center," see the Glossary. If automatic operation is selected and a circuit breaker is utilized for disconnection, it must also have the capability to be manually opened if necessary [40 CFR 761.30(a)(1)(v)(B)].

The enhanced electrical protective system required for the detection of sustained low current faults and the complete and rapid deenergization of transformers must be properly installed and maintained and must be set so that it is sensitive enough, in accordance with good engineering practices, to detect sustained low current faults and allow for rapid and total deenergization prior to PCB Transformer rupture (either violent or nonviolent rupture) and release of PCBs [40 CFR 761.30(a)(1)(v)(C)].

Step 15C The use of **higher secondary voltage network PCB Transformers** (i.e., secondary voltages $\geq$ 480 volts, including 480/277-volt systems) in or near commercial buildings is prohibited [40 CFR 761.30(a)(1)(ii)].

Step 15D Network PCB Transformers with higher secondary voltages that are removed from service in accordance with this requirement must be:

- Reclassified to PCB-contaminated Transformers (i.e., with PCB concentrations of $\geq$ 50 ppm but $<$ 500 ppm) or non-PCB Transformers (i.e., with PCB concentrations of $<$ 50 ppm) status,
- Placed into storage for disposal (see Chapter 7, "Storage"), or
- Disposed of (see Chapter 9, "Disposal") [40 CFR 761.30(a)(1)(ii)].

If you elect to reclassify these transformers, you may place the transformers back in service or store them for reuse. For more information about reclassifying PCB Transformers, see Chapter 4, "Servicing Equipment."

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MODULE 3B
3.5.1 Transformers (Continued)

Step 16 Is the PCB Transformer a network transformer or a radial transformer? Radial PCB Transformers are subject to different use conditions and restrictions than network PCB Transformers. The requirements for radial PCB Transformers are discussed in Step 16A, and those for network PCB Transformers are discussed in Step 17.

Step 16A All **lower secondary voltage radial PCB Transformers** (i.e., network transformers with secondary voltages < 480 volts) in use in or near commercial buildings must be equipped with electrical protection to avoid transformer ruptures caused by high current faults [40 CFR 761.30(a)(1)(iv)].

Partial deenergization, i.e., deenergizing only the faulted phase(s) in a low-voltage radial transformer, may, in some circumstances, be equivalent to total deenergization of such transformers in the event of a high current fault. This rule states that partial deenergization will be equivalent to total deenergization only if the transformer configuration and associated safety factors demonstrate that partial deenergization is consistent with EPA's goals of avoiding fault-related failures, tank rupture, and fires in PCB Transformers. Owners and operators of low voltage radial transformers in or near commercial buildings who wish to utilize partial deenergization will be required to install this type of electrical protection using good engineering practices [55 *Federal Register* 49043].

Lower secondary voltage radial PCB Transformers must be equipped with electrical protection (e.g., current-limiting fuses or other equivalent technology) to detect sustained high current faults and provide for the complete deenergization of the transformer or complete deenergization of the faulted phase of the transformer within several hundredths of a second. The installation, setting, and maintenance of current-limiting fuses or other equivalent technology to avoid PCB Transformer ruptures from sustained high current faults must be completed in accordance with good engineering practices [40 CFR 761.30(a)(1)(iv)(E)].

Step 17 Is the **lower secondary voltage network PCB Transformer** (i.e., network transformer with secondary voltages < 480 volts) located in a sidewalk vault? If yes, proceed to Step 17A; otherwise, proceed to Steps 17B and 17C.

Step 17A Lower secondary voltage network PCB Transformers **located in sidewalk vaults** in use near commercial buildings must be removed from service by October 1, 1993 [40 CFR 761.30(a)(1)(iv)(D)]. *This prohibition was also noted in Step 6.*

Step 17B Lower secondary voltage network PCB Transformers **not located in sidewalk vaults** in or near commercial buildings must either be equipped with electrical protection to avoid transformer ruptures caused by high current faults, or removed from service by October 1, 1993 [40 CFR 761.30(a)(1)(iv)]. Details regarding these options follows.

Current-limiting fuses or other equivalent technology must be used to detect sustained high current faults and provide for the complete deenergization of the transformer within several tenths of a second before transformer rupture occurs. The installation, setting, and maintenance of current-limiting fuses or other equivalent technology to avoid PCB Transformer ruptures from sustained high current faults must be completed in accordance with good engineering practices [40 CFR 761.30(a)(1)(iv)(A)].

All lower secondary voltage network PCB Transformers in use in or near commercial buildings (but not located in sidewalk vaults) that are not protected from high current faults by October 1, 1990, must be removed from service by October 1, 1993 [40 CFR 761.30(a)(1)(iv)(B)].

- Step 17C** Lower secondary voltage network PCB Transformers not located in sidewalk vaults must be registered in writing with the EPA Regional Administrator in the appropriate EPA Region. For each PCB Transformer, this registration must include the specific location of the PCB Transformer, the address of the building and the physical location of the PCB Transformer on the building site, and the identification number of the PCB Transformer [40 CFR 761.30(a)(1)(iv)(C)].

3.5.2 TRANSFORMERS IN RAILROAD LOCOMOTIVES OR SELF-PROPELLED RAILROAD CARS

This section describes the prohibitions and use restrictions for railroad transformers (i.e., in railroad locomotives or railroad self-propelled cars) containing PCBs.

PCBs may be used in railroad transformers in other than a totally enclosed manner subject to the following conditions:

- The railroad transformers must contain dielectric fluid with a PCB concentration of $\leq 1,000$ ppm [40 CFR 761.30(b)(1)(vi)].
- The concentration of PCBs in the dielectric fluid contained in railroad transformers must be measured:
 - Immediately upon completion of any authorized servicing of a railroad transformer (see Chapter 4, "Servicing Equipment") conducted for the purpose of reducing the PCB concentration in the dielectric fluid in the transformer [40 CFR 761.30(b)(1)(vii)(A)]; and
 - Between 12 and 24 months after each servicing described above [40 CFR 761.30(b)(1)(vii)(B)].
- The railroad transformers must be serviced as specified at 40 CFR 761.30(b)(2). Refer to Chapter 4, "Servicing Equipment," for details.

3.5.3 CAPACITORS

This section describes the prohibitions and use restrictions that apply to PCB capacitors.

PCBs at any concentration may be used in capacitors, subject to the following conditions:

- The use and storage for reuse of PCB Large High-voltage Capacitors and PCB Large Low-voltage Capacitors (see Glossary definition of "capacitor") must not pose a risk to food or feed [40 CFR 761.30(l)(1)(i)]. *For example, keep these types of capacitors away from cafeterias or food vending machine areas.*
- PCB Large High-voltage Capacitors and PCB Large Low-voltage Capacitors must be used either within a restricted-access electrical substation or in a contained and restricted-access indoor installation [40 CFR 761.30(l)(1)(ii)].

Clarification

Restricted-access Areas

A **restricted-access electrical substation** is an outdoor, fenced, or walled-in facility that restricts public access and is used in the transmission or distribution of electric power [40 CFR 761.30(l)(1)(ii)].

A **contained and restricted-access indoor installation** does not have public access and has an adequate roof, walls, and floor to contain any release of PCBs within the indoor location [40 CFR 761.30(l)(1)(ii)].

Many DOE facilities would fit this definition.

PCB capacitors are authorized for use only as long as they are not leaking. If a PCB capacitor leaks, it is no longer authorized for use and must be declared a PCB waste under 40 CFR Part 761, Subpart D. Refer to Chapters 7, 9, and 12 for guidance on the management of leaking PCB items and storage and disposal of PCB wastes.

3.5.4 HEAT TRANSFER SYSTEMS AND HYDRAULIC SYSTEMS

This section describes the prohibitions and use restrictions that apply to heat transfer systems and hydraulic systems containing PCBs.

Intentionally manufactured PCBs may be used in heat transfer systems and hydraulic systems at a PCB concentration of < 50 ppm PCBs, provided that each person who has ever owned a heat transfer system or hydraulic system that contained PCBs at concentrations of ≥ 50 ppm must test for the PCB concentration at least annually [40 CFR 761.30(d)(1) and (e)(1)].

Heat transfer systems and hydraulic systems containing PCBs at a concentration of ≥ 50 ppm may be used if they are serviced as specified in Chapter 4, "Servicing Equipment," until the PCB concentration is reduced to < 50 ppm.

3.5.5 CIRCUIT BREAKERS, RECLOSERS, AND CABLE

This section describes the prohibitions and use restrictions that apply to circuit breakers, reclosers, and cable containing PCBs.

PCBs at any concentration may be used in circuit breakers, reclosers, and cable for the remainder of their useful lives [40 CFR 761.30(m)], subject to the servicing conditions specified in Chapter 4, "Servicing Equipment."

3.5.6 ELECTROMAGNETS, SWITCHES, AND VOLTAGE REGULATORS

This section describes the prohibitions and use restrictions that apply to electromagnets, switches, and voltage regulators containing PCBs.

PCBs at any concentration may be used in electromagnets, switches (including sectionalizers and motor starters), and voltage regulators and may be used for purposes of servicing this equipment (including rebuilding) for the remainder of their useful lives. The following conditions apply to the use of electromagnets containing PCBs:

- The use and storage for reuse of any electromagnet which poses an exposure risk to food or feed is prohibited if the electromagnet contains PCBs at a concentration of > 500 ppm [40 CFR 761.30(h)(1)(i)]. *Remember not to use or store such equipment near cafeterias or food vending machine areas.*
- A visual inspection of certain electromagnets must be performed at least once every week. See Chapter 5, "Inspecting PCB Items," for details.

3.5.7 COMPRESSORS AND NATURAL GAS PIPELINES

This section describes the prohibitions and use restrictions that apply to compressors and natural gas pipelines containing PCBs.

PCBs may be used indefinitely in compressors and in the liquids of natural gas pipelines at a PCB concentration of < 50 ppm, provided that the compressors and pipelines are marked in accordance with 40 CFR 761.45(a) [40 CFR 761.30(i)]. Refer to Chapter 6, "Marking," for more information about the marking requirements for compressors and natural gas pipelines.

3.5.8 SMALL QUANTITIES FOR RESEARCH AND DEVELOPMENT

This section describes the prohibitions and use restrictions that apply to PCBs used in small quantities for research and development.

PCBs may be used indefinitely in small quantities for research and development. The quantity of PCBs that may be used in research and development is strictly limited to one or more hermetically sealed containers of no more than 5.0 ml. PCBs may not be used for the development of a PCB product [40 CFR 761.3]. EPA has authorized the use of PCBs in small quantities for research and development because of the importance it places on the need for reference standards for analytical purposes. EPA acknowledges that the extremely limited exposure to PCBs associated with such use would not permit an unreasonable risk to human health or the environment (44 *Federal Register* 31536).

3.5.9 OPTICAL LIQUIDS AND MICROSCOPY

PCBs may be used as a permanent microscopic mounting medium indefinitely [40 CFR 761.30(k)].

PCBs may be used as an immersion oil in fluorescence microscopy indefinitely [40 CFR 761.30(n)].

PCBs may be used as optical liquids indefinitely [40 CFR 761.30(o)].

3.6 MODULE 3C: MANUFACTURE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 3.3 to arrive at Module 3C.

Reminder

PCBs and PCB Items → Not exempt → Manufacture and import → Module C

This module describes the TSCA regulations that apply to the manufacture and import of PCBs and PCB Items.

No person may **manufacture** or **import** PCBs for use within the United States or **manufacture** PCBs for export from the United States without an exemption [40 CFR 761.20(b) and 40 CFR 761.1(f)(1)]. This includes the manufacture of PCBs in small quantities for research and development, for use as a microscopy mounting medium, for use as a low fluorescence immersion oil, and for use as an optical liquid [40 CFR 761.30(j), (k), (n), and (o)].

Clarification

Obtaining an Exemption

TSCA generally prohibits the manufacture, processing, and distribution in commerce of PCBs. It does provide, however, in TSCA Section 6(e)(3)(B), a procedure whereby persons may petition the EPA Administrator for an exemption from these prohibitions. EPA may grant an exemption if:

- An unreasonable risk of injury to health or the environment would not result, and
- Good faith efforts have been made to develop a chemical substance that may be substituted for PCBs.

Regulatory Issue

Manufacture of PCBs for Disposal-related Studies

EPA may propose to allow the manufacture and import of a specified amount of PCBs per year for the purpose of conducting disposal-related treatability studies through an amendment to the PCB regulations at 40 CFR Part 761. The PCBs would be required to be used by the manufacturer or a wholly-owned subsidiary for research and development purposes only; distribution in commerce would be prohibited unless an exemption is granted. In addition, certain notification requirements would apply.

EPA is also considering the addition of a use authorization at 40 CFR 761.30 for treatability study samples which, among other provisions, would limit the amount of non-liquid PCBs that a laboratory may handle annually and still qualify for the small-quantity exemption from the commercial storage requirements.

3.7 MODULE 3D: PROCESS AND DISTRIBUTION IN COMMERCE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 3.3 to arrive at Module 3D.

Reminder

PCBs and PCB Items → Not exempt → Process and distribution in commerce → Module D

This module describes the TSCA regulations that apply to the process and distribution in commerce of PCBs and PCB Items. "Processing" of PCBs refers to activities such as formulating, adding liquids, diluting, or even removing PCBs from one container and placing them in another. "Distribution in commerce" regulations were developed to allow the sale and resale of PCB materials that were in existing inventories when the TSCA regulations were promulgated. "Process" and "distribute in commerce" are both defined at 40 CFR 761.3 (see Glossary).

The flow chart on the next page guides you through the process of identifying applicable requirements to ensure that the process and distribution in commerce of PCBs and PCB Items complies with the TSCA regulations. Processing and distribution in commerce that is not specifically authorized by the regulations is **banned**.

Regulatory Issue

Distribution in Commerce of Certain Transformers and Large Capacitors

Because no records are currently required that document the sale of PCB Articles, EPA has expressed concern that illegal disposal of PCB Transformers, PCB-contaminated Transformers, Large High-voltage Capacitors, and Large Low-voltage Capacitors may occur under the pretense that the item was sold. EPA is considering imposing a recordkeeping requirement for the distribution in commerce of these PCB Articles to prevent such illegal disposal. EPA is also considering requiring that records be kept of the PCB content, servicing, and inspections involving these items.

MODULE 3D
3.7.1 Process and Distribution in Commerce

SUPPLEMENTAL INFORMATION FOR SECTION 3.7.1, PROCESS AND DISTRIBUTION IN COMMERCE

- Step 1** **Start** -- TSCA restricts the process and distribution in commerce of PCBs and PCB Items at any concentration.
- Step 2** **What is the PCB concentration?** For more information about processing and distribution in commerce of PCBs and PCB Items with a PCB concentration of < 50 ppm, proceed to Step 2A; otherwise, go to Step 2B.

Note that, for regulatory purposes, materials contaminated with PCBs as a result of a spill or leak are considered to have the same PCB concentration as the spilled PCBs or leaking PCB Item [40 CFR 761.1(b)].

- Step 2A** PCBs or PCB Items with PCB concentrations of < 50 ppm may not be processed and distributed in commerce for use without an exemption under TSCA 6(e)(3)(B) [40 CFR 761.20(c)(4)]. However, for the purpose of disposal, an exemption is not required to process or distribute in commerce.

Clarification

Process and Distribution in Commerce for Use

In addition to the authorization for processing and distribution in commerce for disposal of PCBs and PCB Items at PCB concentrations of < 50 ppm, the processing, distribution in commerce, and use of items containing PCB concentrations of < 50 ppm is generally authorized provided that the PCBs present in the products were legally manufactured, processed, distributed in commerce, and/or used prior to October 1, 1984. The only exception to the authorization of activities involving PCB materials with PCB concentrations of < 50 ppm is the limitation on the use of oil containing a PCB concentration of < 50 ppm as a fuel [53 *Federal Register* 24207].

- Step 2B** EPA has determined, under the authority of Section 12(a)(2) of TSCA, that the processing and distribution in commerce of PCBs or PCB Items with PCB concentrations of $\geq$ 50 ppm presents an unreasonable risk of injury to health within the United States [40 CFR 761.20]. An exemption is required under TSCA Section 6(e)(3)(B) to process and distribute in commerce PCBs or PCB Items with PCB concentrations of $\geq$ 50 ppm for purposes of:
- Use within the United States [40 CFR 761.20(c)];
 - Export from the United States [40 CFR 761.20(c)];
 - Servicing transformers [40 CFR 761.30(a)(2)(vii)];
 - Servicing railroad transformers [40 CFR 761.30(b)(2)(vi)];
 - Servicing electromagnets, switches, or voltage regulators [40 CFR 761.30(h)(2)(vii)];

- Use in small quantities for research and development [40 CFR 761.30(j)];
- Use as a microscopy mounting medium [40 CFR 761.30(k)];
- Use as a low fluorescence immersion oil [40 CFR 761.30(n)]; and
- Use as an optical liquid [40 CFR 761.30(o)].

Clarification

Obtaining an Exemption

TSCA generally prohibits the manufacture, processing, and distribution in commerce of PCBs. It also provides, in TSCA section 6(e)(3)(B), a procedure whereby persons may petition the EPA Administrator for an exemption from these prohibitions. EPA may grant an exemption if:

- An unreasonable risk of injury to health or the environment would not result, and
- Good faith efforts have been made to develop a chemical substance that may be substituted for PCBs.

The process and distribution in commerce of PCBs and PCB Items with PCB concentrations of ≥ 50 ppm may be conducted without an exemption under TSCA Section 6(e)(3)(B) in the circumstances described in Steps 2C through 2E [40 CFR 761.20(c)].

Step 2C PCBs or PCB Items with PCB concentrations of ≥ 50 ppm, sold before July 1, 1979, for purposes other than resale, may be distributed in commerce only in a totally enclosed manner after that date [40 CFR 761.20(c)(1)], unless an exemption is granted.

Clarification

Totally Enclosed Manner

A totally enclosed manner is one that results in no exposure to PCBs for humans or the environment [40 CFR 761.3]. The following activities are considered totally enclosed:

- Distribution in commerce of intact, non-leaking electrical equipment that contain PCBs at any concentration, such as:
 - Transformers (including transformers used in railway locomotives and self-propelled cars),
 - Capacitors,
 - Electromagnets,

Continued on next page

- Voltage regulators,
 - Switches (including sectionalizers and motor starters),
 - Circuit breakers,
 - Reclosers, and
 - Cable.
- Processing and distribution in commerce of PCB Equipment containing an intact, non-leaking PCB Capacitor [40 CFR 761.20].

Step 2D PCBs or PCB Items with PCB concentrations of ≥ 50 ppm may be processed and distributed in commerce for purposes of disposal without an exemption, provided the disposal requirements of 40 CFR 761.60 are met (see Chapter 9, "Disposal") [40 CFR 761.20(c)(2)].

Step 2E Equipment, structures, or other materials that were contaminated with PCBs because of spills from, or proximity to, a PCB Item with a PCB concentration of ≥ 50 ppm, and which are not otherwise authorized for use or distribution in commerce, may be distributed in commerce without an exemption, provided that these materials were decontaminated in accordance with the PCB Spill Cleanup Policy (i.e., Subpart G of 40 CFR Part 761) in effect at the time of the decontamination or, if not previously decontaminated, at the time of the distribution in commerce (see Chapter 12, "Spill Reporting and Cleanup") [40 CFR 761.20(c)(5)].

Regulatory Issue

Use of Decontaminated Equipment, Structures, and Materials

EPA is considering allowing the distribution in commerce and use of items (e.g., equipment, structures, and other materials) that have been decontaminated to meet TSCA cleanup standards. See Chapter 12, "Spill Reporting and Cleanup," for details on the cleanup standards.

3.8 MODULE 3E: EXPORT

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 3.3 to arrive at Module 3E.

Reminder

PCBs and PCB Items → Not exempt → Export → Module E

This module describes the TSCA regulations that apply to the export of PCBs and PCB Items.

PCBs and PCB Items may not be exported for disposal [40 CFR 761.20(c)(3)]. *Although not specifically stated in the TSCA regulations, this regulation is interpreted to apply only to PCBs and PCB Items with PCB concentrations of ≥ 50 ppm (USEPA 1992).*

PCBs and PCB Items at concentrations of < 50 ppm may be exported for purposes of disposal [40 CFR 761.20(b)(2)].

3.9 REFERENCES

USEPA. 1992. U.S. Environmental Protection Agency. Telephone discussion between Ms. Geraldine Hilton, Operations Branch, Chemical Management Division, Office of Pollution Prevention and Toxics and Energetics, Inc., Columbia, MD. November 20, 1992.

3.10 CHECKLIST FOR CHAPTER 3 -- PROHIBITED AND AUTHORIZED ACTIVITIES

The following checklist allows PCB managers to determine how well they are complying with the TSCA regulations for the use, manufacture, import, process, distribution in commerce, and export of PCBs and PCB Items. PCB managers are encouraged to use it to scrutinize current PCB management practices, and to identify areas of noncompliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Have you determined whether any more stringent Federal, state, or local restrictions apply to your PCB activities?	_____	_____	_____
General	Do you have PCB material mixed with RCRA hazardous waste and/or contaminated with radioactive constituents?	_____	_____	_____
	Have you properly characterized the materials and identified all applicable RCRA and/or AEA requirements?	_____	_____	_____
A	Do you qualify for an exemption from the requirements of Subpart B for recycled PCBs?	_____	_____	_____
	Do you meet the recordkeeping and reporting requirements of Subpart J?	_____	_____	_____

Continued on next page

Module	1 Yes	2 No	3 N/A
A Does the recycling process meet the regulatory definition of "recycled PCBs" at 40 CFR 761.3? Do you manufacture PCBs and PCB Items in excluded manufacturing processes? Have you met all the requirements of the regulatory definition of "excluded manufacturing process" at 40 CFR 761.3?			
A Have you identified all other TSCA requirements (e.g., recordkeeping, marking, reporting) that apply?			
B Have you registered all PCB Transformers (i.e., transformers with a PCB concentration $\geq$ 500 ppm) in use in or near commercial buildings with building owners and fire response personnel?			
B Have you removed from service all PCB Transformers that pose a risk to food or feed?			
B Have you confirmed that no combustible materials are stored near unenclosed PCB Transformers or PCB Transformer enclosures?			
B Have any leaking PCB Transformers been found?			
Was the transformer either repaired or replaced?			

Continued on next page

Module		1 Yes	2 No	3 N/A
B	Have you installed electrical protection devices as required for your particular type of PCB Transformer?	_____	_____	_____
B	Have you identified and complied with the use conditions and restrictions applicable to other PCBs and PCB Items (capacitors, circuit breakers, etc.)?	_____	_____	_____
C	Do you manufacture or import PCBs for use within the United States?	_____	_____	_____
	Have you been granted an exemption?	_____	_____	_____
D	Have you determined whether you must be granted an exemption in order to process or distribute PCBs in commerce?	_____	_____	_____
D	Are all PCBs and PCB Items with a PCB concentration of ≥ 50 ppm distributed in commerce in a totally enclosed manner, as defined by 40 CFR 761.20?	_____	_____	_____
D	Are all materials contaminated with PCBs at a concentration of ≥ 50 ppm decontaminated in accordance with applicable EPA PCB spill cleanup policies prior to distribution in commerce?	_____	_____	_____
E	Are only PCBs and PCB Items with a concentration < 50 ppm exported for disposal?	_____	_____	_____

For applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 4

SERVICING EQUIPMENT

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4.1 INTRODUCTION

This chapter covers the TSCA regulations for servicing and reclassifying PCB-containing equipment in use. The TSCA servicing requirements are found at Subpart B of 40 CFR Part 761 of the TSCA regulations.

Subpart B also contains restrictions and prohibitions on certain PCB activities (e.g., use, manufacture, process, distribution in commerce, import, and export). Prior to reading this chapter, DOE Personnel should read Chapter 3, "Prohibited and Authorized Activities," to determine whether any of the restrictions and prohibitions of Subpart B affect the PCB Items in need of servicing.

The TSCA regulations contain servicing and reclassifying requirements for transformers, railroad transformers, heat transfer systems, hydraulic systems, circuit breakers, reclosers, cable, electromagnets, switches, and voltage regulators. Servicing of other PCB Items is not addressed. If you have another type of PCB Item that requires servicing, read Section 4.2, "General Requirements and Considerations," to determine if any other Federal or state requirements covering equipment servicing apply.

Several types of PCB materials are exempt from the requirements of Subpart B of 40 CFR Part 761 but may be subject to other TSCA requirements. The Master Flow Chart for this chapter helps the reader identify these PCB materials.

DOE Personnel should refer to this guidance before servicing PCB Items to verify that the intended servicing is in compliance with applicable regulations.

4.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

4.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Excluded manufacturing process,
- Excluded PCB products,
- Impurity,
- Inadvertently generated PCBs,
- Leak or leaking,
- Manufacturing process,
- Mineral Oil PCB Transformer,
- Mixture,
- Recycled PCBs,
- Retrofill, and
- Waste oil.

When confronted with an unfamiliar term, consult the Glossary.

4.2.2 PCBs REMOVED FROM ELECTRICAL EQUIPMENT

Dielectric fluid removed from mineral-oil filled electrical equipment during servicing may be collected in a common container, provided that no other chemical substances or mixtures are added to the container [40 CFR 761.60(g)(1)(i)].

Waste oil from more than one source may be collected in a common container, provided that no other chemical substances or mixtures, such as non-waste oils, are added to the container [40 CFR 761.60(g)(2)(i)].

These common container options do not permit dilution of the collected oil. It is important that you read Section 2.4.3, "The Mixture Rule," before removing dielectric fluid or waste oil from PCB-containing equipment.

Refer to Chapter 7, "Storage," for the requirements applicable to containers used to store dielectric fluid or waste oil removed from PCB Items during servicing.

4.2.3 EQUIPMENT THAT CANNOT BE REPAIRED

If, during servicing of malfunctioning equipment containing a PCB concentration of ≥ 50 ppm, a determination is made that the equipment cannot be repaired or is no longer fit for service, then the equipment must be taken out of service and disposed of as a PCB waste. It may not be stored for use or reuse. Refer to Chapter 9, "Disposal," for details.

Regulatory Issue

Repair of Malfunctioning Equipment

EPA is considering amending the regulations at 40 CFR Part 761 to clarify that the owner of malfunctioning equipment containing PCBs at a concentration of ≥ 50 ppm would be subject to the 1-year limit on storage for disposal if a determination is made that the equipment cannot be repaired. *Note that the 1-year "clock" would begin at the time the determination is made. See Chapter 7, "Storage," for details.*

4.2.4 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes,

regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environmental Guidance (EH-23) for instructions on how to proceed. EH-23 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

4.2.5 STATE REGULATIONS

The state in which the PCB Items are located may have additional regulations that apply to the servicing of PCB Items. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

4.2.6 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

The modules in this chapter describe the TSCA requirements for servicing PCB Items. Normally, servicing PCB Items would not lead to situations in which PCBs or PCB Items would become mixed with RCRA hazardous waste. However, if PCBs or PCB Items become mixed with RCRA hazardous waste, they are subject to:

- Applicable restrictions on activities involving RCRA hazardous waste, as described in 40 CFR Parts 262-266, and 268;
- DOE Order 5400.1, "General Environmental Protection Program"; and

- DOE Order 5400.3, "Hazardous and Radioactive Mixed Waste Program."

If, as a result of its contamination with RCRA hazardous waste, the PCB material is no longer fit for service, the PCB material would no longer be considered in use and therefore must be disposed of. See Chapter 7, "Storage," for the TSCA requirements for PCB materials stored for disposal and Chapter 9, "Disposal," for the TSCA disposal requirements.

4.2.7 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCB material contaminated with radioactive constituents is regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentrations of PCBs. Thus, PCB material with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

4.3 MASTER FLOW CHART: SERVICING EQUIPMENT

The flow chart and the supplemental information on the following pages will help you to comply with the TSCA requirements applicable to servicing PCB Items.

MASTER FLOW CHART: SERVICING EQUIPMENT
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION TO MASTER FLOW CHART: SERVICING EQUIPMENT

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers the TSCA servicing requirements for PCB Items in authorized uses.

Historic uses of PCBs that are not authorized under the TSCA regulations described in Chapter 3 may result in a violation.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 4.2, "General Requirements and Considerations," which contains information about the requirements that could apply to any PCB Items requiring servicing or PCBs used for servicing PCB Items.

Step 2 **Is your PCB material exempt?** The following PCBs and PCB Items are conditionally exempt from the use restrictions and conditions, including servicing requirements, of Subpart B of 40 CFR Part 761:

- Inadvertently manufactured or imported PCBs generated as unintentional impurities in excluded manufacturing processes [40 CFR 761.1(f)(1)];
- Products containing PCBs generated in excluded manufacturing processes [40 CFR 761.1(f)(2)];
- Products containing recycled PCBs [40 CFR 761.1(f)(3)]; and
- Products containing excluded PCB products, i.e., materials with PCB concentrations of < 50 ppm PCBs (except for used oil burned for energy recovery) [40 CFR 761.1(f)(4)].

However, to qualify for an exemption from Subpart B, these eligible PCB materials must meet the TSCA requirements described in Chapter 3, "Prohibited and Authorized Activities." Many of the terms used to describe the PCBs and PCB Items exempted by 40 CFR 761.1(f) are defined in 40 CFR 761.3. Refer to the Glossary for their regulatory definitions.

If your PCB material qualifies for an exemption from Subpart B, read Step 2A. If your PCB material is not exempt from Subpart B, proceed to Step 3.

Step 2A The PCBs and PCB Items described in Step 2 are exempt from the servicing conditions and restrictions at Subpart B of 40 CFR Part 761 and are not subject to any of the modules in this chapter [40 CFR 761.1(f)].

DOE Personnel should be aware, however, that any more stringent regulations issued under EPA authorities, or any permit conditions or pretreatment requirements issued by EPA or a state or local government that affect the release of PCBs to any medium would supersede these exemptions [40 CFR 761.1(f)].

Step 3 **What type of PCB Item requires servicing?** PCBs used for servicing PCB Items are regulated according to the type of PCB Item in which they are used. Module 4A describes the TSCA conditions and restrictions that apply to the servicing of heat transfer systems and hydraulic systems. Module 4B discusses the TSCA conditions and restrictions that apply to the servicing of circuit breakers, reclosers, cable, electromagnets, switches, and voltage regulators. If you are interested in the TSCA regulations for servicing transformers, proceed to Step 4 to determine the module that applies to your transformers.

Servicing of items that are not listed above is not regulated under TSCA. If you wish to service such an item, consult with your EPA Region or call the TSCA Hotline for advice (202-554-1404).

Clarification

Mining Equipment Containing PCBs

TSCA permitted the use of PCBs to service mining equipment until January 1, 1982 [40 CFR 761.30(c)]. The use of mining equipment containing PCBs is no longer allowed.

Step 4 **Do you have a railroad transformer?** Railroad transformers are transformers in railroad locomotives or railroad self-propelled cars. The TSCA servicing conditions and restrictions that apply to railroad transformers are discussed in Module 4D. Regulations for servicing other transformers, including mineral oil transformers, are discussed in Module 4C.

4.4 **MODULE 4A: HEAT TRANSFER SYSTEMS AND HYDRAULIC SYSTEMS**

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 4.3 to arrive at Module 4A.

Reminder

PCB Equipment → Subject to Subpart B → Heat transfer systems and hydraulic systems → Module 4A

This module describes the servicing regulations that apply to heat transfer systems and hydraulic systems under TSCA.

The flow chart on the next page guides you through the process of identifying applicable requirements to ensure that servicing of heat transfer systems and hydraulic systems complies with the TSCA regulations.

MODULE 4A
4.4 Heat Transfer Systems and Hydraulic Systems

SUPPLEMENTAL INFORMATION FOR SECTION 4.4, HEAT TRANSFER SYSTEMS AND HYDRAULIC SYSTEMS

- Step 1** **Start** – This module describes the servicing regulations that apply to heat transfer systems and hydraulic systems under TSCA. PCBs may be used to service heat transfer systems and hydraulic systems subject to the conditions described in this module.
- Step 2** The following general considerations apply to the servicing of heat transfer systems and hydraulic systems at any PCB concentration:
- Topping-off with heat transfer fluids or hydraulic fluids containing PCB concentrations of < 50 ppm to reduce the PCB concentration is permitted [40 CFR 761.30(d)(2) and (e)(2)], and
 - Addition of fluids containing PCB concentrations of ≥ 50 ppm is **prohibited** [40 CFR 761.30(d)(4) and (e)(3)].
- Step 3** **What is the PCB concentration?** Proceed to Step 4 for more information on servicing requirements for heat transfer systems and hydraulic systems if your equipment is tested and found to contain PCBs at concentrations of ≥ 50 ppm (0.005% on a dry weight basis). If your heat transfer system or hydraulic system contains PCBs at concentrations of < 50 ppm, proceed to Step 3A.
- Step 3A** No further servicing requirements apply.
- Step 4** The system must be drained of PCBs and refilled with fluid containing a PCB concentration of < 50 ppm within 6 months of testing.
- Step 5** Heat transfer systems and hydraulic systems that contain PCBs at concentrations of ≥ 50 ppm must be tested for the PCB concentration in the heat transfer fluid or hydraulic fluid at least annually [40 CFR 761.30(d)(1) and (e)(1)]. All annual testing for PCB concentration must be performed at least 3 months after the most recent fluid refilling (i.e., servicing).
- Step 6** Data obtained as a result of testing for PCB concentration must be retained for 5 years after the fluid in the heat transfer system or hydraulic system reaches a PCB concentration of < 50 ppm [40 CFR 761.30(d)(5) and (e)(5)].
- Step 7** **Did the test show that the PCB concentration is still ≥ 50 ppm?** If the PCB concentration is still ≥ 50 ppm, return to Step 4. Servicing must be repeated until it can be demonstrated that the system contains a PCB concentration of < 50 ppm [40 CFR 761.30(d)(2) and (e)(2)]. If the test results show that the PCB concentration has been decreased to a level < 50 ppm, annual testing to fulfill the requirement described in Step 5 is no longer required [40 CFR 761.30(d)(1) and (e)(1)]. *All DOE heat transfer or hydraulic systems should contain fluid with a PCB concentration of < 50 ppm or be in the process of reducing the PCB concentration to a level of < 50 ppm.*

4.5 MODULE 4B: CIRCUIT BREAKERS, RECLOSERS, CABLE, ELECTROMAGNETS, SWITCHES, AND VOLTAGE REGULATORS

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 4.3 to arrive at Module 4B.

Reminder

PCB Equipment → Subject to Subpart B → Circuit breakers, reclosers, and cable, or electromagnets, switches, and voltage regulators → Module 4B

This module describes the servicing conditions that apply to circuit breakers, reclosers, cable, electromagnets, switches, and voltage regulators; procedures for servicing these PCB Items for reclassification purposes; and the regulations applicable to PCBs used for servicing these PCB Items.

The flow chart on the next page guides you through the process of identifying applicable requirements to ensure that servicing of circuit breakers, reclosers, cable, electromagnets, switches, and voltage regulators complies with the TSCA regulations.

MODULE 4B
**4.5 Circuit Breakers, Reclosers, Cable, Electromagnets, Switches,
and Voltage Regulators**

SUPPLEMENTAL INFORMATION FOR SECTION 4.5, CIRCUIT BREAKERS, RECLOSERS, CABLE, ELECTROMAGNETS,

- Step 1** **Start** -- This module describes the servicing conditions that apply to circuit breakers, reclosers, cable, electromagnets, switches, and voltage regulators; procedures for servicing these PCB Items for reclassification purposes; and the regulations applicable to PCBs used for servicing these PCB Items.
- Step 2** Servicing (including rebuilding) any circuit breaker, recloser, cable, electromagnet, switch, or voltage regulator with a PCB concentration of ≥ 500 ppm that requires the removal and rework of the internal components is **prohibited** [40 CFR 761.30(h)(2)(i) and (m)(1)(ii)]. *In such cases, the PCB Item must be disposed of according to the requirements discussed in Chapter 9, "Disposal."* This is your only option. If this prohibition does not apply to you, proceed to Step 3.
- Step 3** **What type of PCB Item requires servicing?** Certain servicing restrictions apply only to circuit breakers, reclosers, and cable (see Step 3A), while others apply only to electromagnets, switches, and voltage regulators (see Steps 3B and 3C).
- Step 3A** Circuit breakers, reclosers, and cable may be serviced (including rebuilding) only with dielectric fluid containing a PCB concentration of < 50 ppm [40 CFR 761.30(m)(1)(i)].
- Step 3B** Electromagnets, switches, and voltage regulators classified as PCB-contaminated Electrical Equipment (i.e., contain PCBs at concentrations of ≥ 50 ppm but < 500 ppm) may be serviced (including rebuilding) only with dielectric fluid containing PCBs at concentrations of < 500 ppm [40 CFR 761.30(h)(2)(ii) and (m)(1)(ii)].
- Step 3C** Any dielectric fluid containing PCBs at concentrations of ≥ 50 ppm used for servicing electromagnets, switches, or voltage regulators must be stored in accordance with the storage requirements of 40 CFR 761.65 (see Chapter 7, "Storage") [40 CFR 761.30(h)(2)(vi) and (m)(1)(ii)].

MODULE 4B
**4.5 Circuit Breakers, Reclosers, Cable, Electromagnets, Switches,
and Voltage Regulators (Continued)**

Step 4 **Do you wish to reclassify a circuit breaker, recloser, cable, electromagnet, switch, or voltage regulator?** *Reclassification involves servicing a PCB Item to reduce its PCB concentration so that it may be reclassified in a lower concentration category (e.g., an item may be reclassified from a PCB concentration of ≥ 500 ppm to a PCB concentration of ≥ 50 ppm but < 500 ppm). This is advantageous because it reduces the regulatory burden associated with high concentration (i.e., ≥ 500 ppm) materials. In addition, reclassification can decrease the potential for human exposure to high concentrations of PCBs and reduce the liability associated with the use of such materials. A circuit breaker, recloser, cable, electromagnet, switch, or voltage regulator may be reclassified by:*

- Draining, refilling, and/or otherwise servicing the equipment [40 CFR 761.30(h)(2)(v)];
- Placing the equipment into at least 3 months of in-service use; and
- At the end of the in-service use period, testing to determine the PCB concentration.

If you wish to reclassify one of the PCB Items described in this step, proceed to Steps 4A through 4C; otherwise, skip to Step 5.

Step 4A The first step in reclassifying PCB Equipment is to service the equipment by draining it and refilling it with dielectric fluid of a lower PCB concentration.

Step 4B Once the drained and refilled (i.e., retrofilled) PCB Item has been installed for reclassification purposes, it must be placed into in-service use for a minimum of 3 months. In-service use means that the item is used electrically under loaded conditions that raise the temperature of the dielectric fluid to $\geq 50^{\circ}$ Centigrade. The Director of EPA's Chemical Management Division may grant approval for the use of alternative methods that simulate the loaded conditions of in-service use [40 CFR 761.30(a)(2)(v)]. *Contact the appropriate EPA Region for guidance on how to obtain an approval for the use of an alternative method.*

Step 4C In order to be reclassified, the equipment's dielectric fluid must contain PCBs at concentrations of:

- < 500 ppm (for reclassification as PCB-contaminated Electrical Equipment), or
- < 50 ppm (for reclassification as a non-PCB item).

The PCB concentration of the item must be determined after a minimum of 3 months of in-service use, subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the equipment [40 CFR 761.30(h)(2)(v) and (m)(1)(ii)].

MODULE 4B
**4.5 Circuit Breakers, Reclosers, Cable, Electromagnets, Switches,
and Voltage Regulators (Continued)**

Step 5 PCBs with a concentration of ≥ 50 ppm removed during any servicing activity must be captured and either:

- Reused as dielectric fluid, or
- Disposed of in accordance with the requirements of 40 CFR 761.60 (see Chapter 9) [40 CFR 761.30(h)(2)(iii) and (m)(1)(ii)].

Exception: All PCBs removed from equipment with PCB concentrations of ≥ 50 ppm for purposes of reducing the PCB concentration (i.e., for reclassification) are subject to the disposal requirements of 40 CFR 761.60 (see Chapter 9, "Disposal") [40 CFR 761.30(h)(2)(v) and (m)(1)(ii)]. *That is, this fluid cannot be reused to service PCB equipment; it must be disposed of.*

Step 6 **What is the concentration of dielectric fluid used in the PCB Item?** PCBs with a concentration of < 50 ppm, used to service any of the PCB Items described in this module, must meet fewer requirements than PCBs with concentrations of ≥ 50 ppm. If you have a PCB Item with a PCB concentration of < 50 ppm, proceed to Step 6A. If the PCB concentration is ≥ 50 , go to Step 6B.

Step 6A No further servicing requirements apply.

Step 6B PCBs from circuit breakers, reclosers, cable, electromagnets, switches, and voltage regulators with a PCB concentration of ≥ 500 ppm must not be mixed with or added to dielectric fluid with a PCB concentration of ≥ 50 ppm but < 500 ppm [40 CFR 761.30(h)(2)(iii) and (m)(1)(ii)]. Mixtures resulting from a combination of dielectric fluids containing PCBs with concentrations of < 500 ppm and fluids that contain ≥ 500 ppm must not be used as dielectric fluid in any electrical equipment. Such mixtures must be considered to contain PCBs with concentrations of > 500 ppm and therefore must be disposed of in an incinerator that meets the requirements in 40 CFR 761.70 (see Chapter 9, "Disposal") [40 CFR 761.30(h)(2)(iv) and (m)(1)(ii)].

4.6 MODULE 4C: TRANSFORMERS

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 4.3 to arrive at Module 4C.

Reminder

PCB Equipment → Subject to Subpart B → Transformers → Transformers and mineral oil transformers → Module 4C

This module describes the servicing conditions that apply to transformers, regulations for reclassifying transformers, and regulations applicable to PCBs used to service transformers.

The flow chart on the next page guides you through the process of identifying applicable requirements to ensure that servicing of transformers complies with the TSCA regulations.

MODULE 4C
4.6 Transformers

SUPPLEMENTAL INFORMATION FOR SECTION 4.6, TRANSFORMERS

Step 1 **Start** -- This module describes the servicing conditions that apply to transformers, regulations for reclassifying transformers, and regulations applicable to PCBs used to service transformers.

Clarification

Transformer Classifications

Please note that TSCA regulates transformers according to three classifications:

- PCB Transformers and Mineral Oil PCB Transformers (PCB concentration ≥ 500 ppm),
- PCB-contaminated Electrical Equipment (PCB concentration ≥ 50 ppm but < 500 ppm), and
- Non-PCB Transformers (PCB concentration < 50 ppm).

Step 2 **What is the PCB concentration?** If the PCB concentration of the dielectric fluid in the transformer is < 500 ppm, proceed to Step 2A; otherwise, proceed to Steps 2B and 2C.

Step 2A Transformers classified as PCB-contaminated Electrical Equipment (i.e., containing PCBs at concentrations of ≥ 50 ppm but < 500 ppm) may be serviced (or rebuilt) only with dielectric fluid containing PCB concentrations of < 500 ppm [40 CFR 761.30(a)(2)(i)]. Proceed to Step 3.

Step 2B PCB Transformers and Mineral Oil PCB Transformers (i.e., transformers with a PCB concentration of ≥ 500 ppm) may be serviced (including topped off) with dielectric fluid at any PCB concentration [40 CFR 761.30(a)(2)(ii)].

Clarification

Mineral Oil PCB Transformers

Both Mineral Oil PCB Transformers and PCB Transformers contain PCBs with a concentration of ≥ 500 ppm. The difference between the two is that Mineral Oil PCB Transformers were originally designed to contain mineral oil as the dielectric fluid. Refer to the Glossary for further information.

Step 2C Any servicing (including rebuilding) of PCB Transformers that requires the removal of the transformer coil from the transformer casing is prohibited [40 CFR 761.30(a)(2)(ii)]. *If removal of the transformer coil from the transformer casing is required, the transformer must be disposed of as described in Chapter 9, "Disposal."* Proceed to Step 3.

Step 3 **Do you wish to reclassify a transformer?** *Reclassification involves servicing a PCB Item to reduce its PCB concentration so that it may be reclassified in a lower concentration category (e.g., an item may be reclassified from a PCB concentration of ≥ 500 ppm to a PCB concentration of ≥ 50 ppm but < 500 ppm). This is advantageous because it reduces the regulatory burden associated with high concentration (i.e., ≥ 500 ppm) materials. In addition, reclassification can decrease the potential for human exposure to high concentrations of PCBs and reduce the liability associated with the use of such materials. A PCB Transformer or Mineral Oil PCB Transformer may be converted to PCB-contaminated Electrical Equipment or to a non-PCB Transformer, and a transformer that is classified as PCB-contaminated Electrical Equipment may be reclassified to a non-PCB Transformer by:*

- Draining, refilling, and/or otherwise servicing the transformer for the purpose of reducing the PCB concentration in the transformer [40 CFR 761.30(a)(2)(v)];
- Placing the transformer into at least 3 months of in-service use; and
- At the end of the in-service use period, testing for PCB concentration in the dielectric fluid of the transformer.

If you wish to reclassify a transformer, proceed to Step 4; otherwise, skip to Step 8.

Step 4 The first step in reclassifying a transformer is to service the transformer by draining it and refilling it with dielectric fluid of a lower PCB concentration.

Clarification

Considerations Before Undertaking Reclassification

The owner of a transformer should consider the following when draining and refilling it (i.e., retrofitting) for reclassification:

- What are the effects of residual PCBs (i.e., the amount of PCBs remaining in the transformer) that will leach into the replacement fluid?
- How might the process of removing the PCBs be detrimental to the mechanical and electrical integrity of the transformer?
- Which replacement fluids can be used and what risks are associated with each of them?
- How many months or years will the retrofit process take?

Continued on next page

- How many outages (i.e., shutdowns of the electrical system) will be required to accomplish the retrofill?
- What cost and risk is associated with the eventual disposal of a transformer that still contains PCBs?
- What is the final cost of the retrofill process, including the cost of supervisory personnel, temporary power, planning, and disposal of the transformer?
- What are the consequences of a fire involving the transformer being retrofilled or involving a transformer that has had time to leach PCBs back into the replacement fluid?

Residual PCBs are found in the transformer core, in the paper, wood, pressboard, and as a coating between the sheets of steel. Leaching of the original fluid into the replacement fluid will continue for years.

Step 5 Once a drained and refilled (i.e., a retrofilled) transformer has been installed for reclassification purposes, it must be placed into in-service use for a minimum of 3 months. In-service use means that the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to $\geq 50^{\circ}$ Centigrade. The Director of EPA's Chemical Management Division may grant approval for the use of alternative methods that simulate the loaded conditions of in-service use [40 CFR 761.30(a)(2)(v)]. *Contact the appropriate EPA Region for guidance on how to obtain an approval for the use of an alternative method.*

MODULE 4C
4.6 Transformers (Continued)

Step 6 After a minimum of 3 months of in-service use, the transformer must be tested to ascertain the concentration of PCBs in the dielectric fluid [40 CFR 761.30(a)(1)(iii)(C)(2)(iii)]. To reclassify the transformer, the transformer's dielectric fluid must be found to contain a PCB concentration of:

- < 500 ppm (for reclassification as PCB-contaminated Electrical Equipment), or
- < 50 ppm (for reclassification as a non-PCB Transformer) [40 CFR 761.30(a)(2)(v)].

Step 7 **What is the PCB concentration?** Special restrictions apply to servicing PCB Transformers and Mineral Oil PCB Transformers in or near commercial buildings for reclassification; these restrictions are discussed in Steps 7A and 7B. After servicing, if the PCB concentration in your transformer is < 500 ppm, proceed to Step 8.

Step 7A If the PCB concentration remains at ≥ 500 ppm, the entire process must either:

- Be repeated until the transformer meets the requirements of reclassification to a PCB-contaminated or non-PCB transformer, as discussed in Step 6 above; or
- The transformer must be removed from service and disposed of according to the TSCA regulations at 40 CFR 761.60 [40 CFR 761.30(a)(1)(iii)(C)(2)(iii)]. Refer to Chapter 9, "Disposal," for details.

Step 7B **PCB Transformers** may not be retrofilled and installed in or near a commercial building for purposes of reclassification [40 CFR 761.30(a)(1)(iii)(C)(2)].

Mineral Oil PCB Transformers may be retrofilled and installed for reclassification purposes in or near a commercial building, [40 CFR 761.30(a)(1)(iii)(C)(2)(ii)]. *EPA recognizes a difference between a Mineral Oil PCB Transformer and a PCB Transformer originally filled with Askarel or another PCB dielectric fluid. EPA believes that the installation of a retrofilled Mineral Oil PCB Transformer for reclassification purposes would not pose an unreasonable risk to public health or the environment [53 Federal Register 27325].*

MODULE 4C
4.6 Transformers (Continued)

Step 8 Dielectric fluids with a PCB concentration of ≥ 50 ppm removed during any servicing activity must be captured and either:

- Reused as dielectric fluid, or
- Disposed of in accordance with the requirements of 40 CFR 761.60 (see Chapter 9, "Disposal") [40 CFR 761.30(a)(2)(iii)].

Exception: All PCBs removed from transformers with PCB concentrations of ≥ 50 ppm for purposes of reducing the PCB concentration are subject to the disposal requirements of 40 CFR 761.60 (see Chapter 9, "Disposal") [40 CFR 761.30(a)(2)(v)]. *That is, this fluid cannot be reused to service PCB Items; it must be disposed of.*

Step 9 **What is the concentration of PCBs in the dielectric fluid of the transformer?**
Special restrictions apply to dielectric fluids containing PCBs at concentrations of ≥ 50 ppm used to service transformers. If the dielectric fluids used to service your transformer have a PCB concentration of < 50 ppm, proceed to Step 9A; otherwise, proceed to Step 9B.

Step 9A Any dielectric fluid containing PCBs at a concentration of ≥ 50 ppm and used for servicing transformers must be stored in accordance with the storage requirements of 40 CFR 761.65 (see Chapter 7, "Storage") [40 CFR 761.30(a)(2)(vi)].

Step 9B PCBs from PCB Transformers (i.e., dielectric fluid from transformers with PCB concentrations of ≥ 500 ppm) must not be mixed with or added to dielectric fluid from PCB-contaminated Electrical Equipment (i.e., dielectric fluid containing PCBs at concentrations of ≥ 50 ppm but < 500 ppm) [40 CFR 761.30(a)(2)(iii)]. Mixtures resulting from a combination of dielectric fluids containing PCBs with concentrations of < 500 ppm and fluids that contain ≥ 500 ppm must not be used as dielectric fluid in any electrical equipment. Such mixtures must be considered to contain PCBs with concentrations of > 500 ppm and therefore must be disposed of in an incinerator that meets the requirements in 40 CFR 761.70 (see Chapter 9, "Disposal") [40 CFR 761.30(a)(2)(iv)].

4.7 MODULE 4D: RAILROAD TRANSFORMERS

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart for Section 4.3 to arrive at Module 4D.

Reminder

PCB Equipment → Subject to Subpart B → Transformers → Railroad transformers
→ Module 4D

This module describes the servicing conditions applicable to railroad transformers, procedures for servicing railroad transformers to reclassify them, and the regulations applicable to PCBs used for servicing railroad transformers.

Railroad transformers must have achieved a PCB concentration of < 60,000 ppm prior to July 1, 1984, to be considered authorized for use under TSCA [48 *Federal Register* 124, Appendix E].

The flow chart on the next page guides you through the process of identifying applicable requirements to ensure that servicing of railroad transformers complies with the TSCA regulations.

MODULE 4D
4.7 Railroad Transformers

SUPPLEMENTAL INFORMATION FOR SECTION 4.7, RAILROAD TRANSFORMERS

- Step 1** **Start** -- This module describes the servicing conditions applicable to railroad transformers (i.e., transformers in railroad locomotives or railroad self-propelled cars); procedures for servicing railroad transformers to reclassify them; and the regulations applicable to PCBs used for servicing railroad transformers.
- Step 2** **Does servicing of the railroad transformer include removal of the coil from the casing?** If it does not, go to Step 2A; otherwise go to Step 2B.
- Step 2A** Railroad transformers may only be serviced with dielectric fluid containing PCBs at a concentration of < 1000 ppm [40 CFR 761.30(b)(2)(iii)].
- Step 2B** If the coil is removed from the casing of a railroad transformer (e.g., the transformer is rebuilt), the railroad transformer must be refilled with dielectric fluid containing a PCB concentration of < 50 ppm [40 CFR 761.30(b)(2)(i)].
- Step 3** **Is servicing of the railroad transformer intended to reduce the concentration of PCBs in the transformer's dielectric fluid?** If servicing is intended to reduce the PCB concentration, proceed to Steps 3A and 3B; otherwise, skip to Step 5.
- Step 3A** Dielectric fluid may be filtered through activated carbon or otherwise industrially processed for the purpose of reducing the PCB concentration in the fluid [40 CFR 761.30(b)(2)(iv)]. *If the dielectric fluid is processed prior to distribution in commerce, it is subject to all applicable TSCA restrictions on these activities, as described in Chapter 3, "Prohibited and Authorized Activities."*

MODULE 4D
4.7 Railroad Transformers (Continued)

Step 3B The concentration of PCBs in the dielectric fluid contained in railroad transformers must be measured:

- Immediately upon completion of any authorized servicing of a railroad transformer that is conducted for the purpose of reducing the PCB concentration in the dielectric fluid in the transformer [40 CFR 761.30(b)(1)(vii)(A)]; and
- Between 12 and 24 months after each servicing that is conducted to reduce the PCB concentration, as described above [40 CFR 761.30(b)(1)(vii)(B)].

Step 4 **Do you wish to reclassify a railroad transformer?** *Reclassification involves servicing a PCB item to reduce its PCB concentration so that it may be reclassified in a lower concentration category (e.g., an item may be reclassified from a PCB concentration of ≥ 500 ppm to a PCB concentration of ≥ 50 ppm but < 500 ppm). This is advantageous because it reduces the regulatory burden associated with high-concentration (i.e., ≥ 500 ppm) materials. In addition, reclassification can decrease the potential for human exposure to high concentrations of PCBs and reduce the liability associated with the use of such materials. A PCB Transformer may be converted to a PCB-contaminated Transformer or to a non-PCB Transformer by:*

- Draining, refilling, and/or otherwise servicing the railroad transformer [40 CFR 761.30(b)(2)(vii)];
- Placing the transformer into at least 3 months of in-service use; and
- At the end of the in-service use period, testing to determine the PCB concentration in the dielectric fluid of the transformer.

If you wish to reclassify a transformer, proceed to Steps 4A through 4C; otherwise, skip to Step 5.

Step 4A The first step in reclassifying a railroad transformer is to service the transformer by draining it and refilling it with dielectric fluid of a lower PCB concentration.

Step 4B Once a drained and refilled (i.e., retrofilled) railroad transformer has been installed for reclassification purposes, it must be placed into in-service use for a minimum of 3 months. *In-service use means that the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to $\geq 50^{\circ}$ Centigrade. The Director of EPA's Chemical Management Division may grant approval for the use of alternative methods that simulate the loaded conditions of in-service use [40 CFR 761.30(a)(2)(v)]. Contact the appropriate EPA Region for guidance on how to obtain an approval for the use of an alternative method.*

Step 4C To reclassify the transformer, the railroad transformer's dielectric fluid must contain PCBs at concentrations of:

- < 500 ppm (for reclassification as a PCB-contaminated Transformer), or
- < 50 ppm (for reclassification as a non-PCB Transformer).

The PCB concentration of the transformer must be determined after a minimum of 3 months of in-service use, subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer [40 CFR 761.30(b)(2)(vii)].

- Step 5** Dielectric fluids with a PCB concentration of ≥ 50 ppm removed during any servicing activity must be captured and either:
- Reused as dielectric fluid, or
 - Disposed of in accordance with the requirements of 40 CFR 761.60 (see Chapter 9, "Disposal") [40 CFR 761.30(a)(2)(iii)].
- Step 6** Any PCB dielectric fluid that is used to service PCB railroad transformers must be stored in accordance with the storage requirements of 40 CFR 761.65 (see Chapter 7, "Storage") [40 CFR 761.30(b)(2)(v)].

4.8 REFERENCES

USEPA. 1992. U.S. Environmental Protection Agency. Telephone discussion between Ms. Geraldine Hilton, Operations Branch, Chemical Management Division, Office of Pollution Prevention and Toxics and Energetics, Inc., Columbia, MD. November 20, 1992.

4.9 CHECKLIST FOR CHAPTER 4 – SERVICING EQUIPMENT

The following checklist allows PCB managers to determine how well they are complying with the TSCA regulations for servicing PCB Items. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of noncompliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Have you determined whether your PCBs or PCB Items are exempt from regulation under Subpart B of 40 CFR Part 761?	_____	_____	_____
General	Have you determined whether any other Federal, state, or local regulations apply?	_____	_____	_____
A	Do you service heat transfer systems and hydraulic systems only with dielectric fluid containing PCB concentrations of < 50 ppm?	_____	_____	_____
A	Do you have heat transfer systems and hydraulic systems that contain PCB concentrations of $\geq$ 50 ppm?	_____	_____	_____
	Are these systems serviced with dielectric fluids containing PCBs at concentrations of < 50 ppm within 6 months?	_____	_____	_____
	Are they tested again for PCB concentration at least 3 months after servicing but less than 1 year after the previous test for PCB concentration?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
B	When circuit breakers, reclosers, cable, electromagnets, switches, or voltage regulators that contain PCB concentrations of ≥ 500 ppm require the removal and rework of internal components, are they removed from service and disposed of according to the TSCA regulations?	_____	_____	_____
B	Have you checked to make sure that dielectric fluid used for servicing electromagnets, switches, and voltage regulators contains a PCB concentration of < 500 ppm?	_____	_____	_____
B	Do you verify that the circuit breaker, recloser, cable, electromagnet, switch, or voltage regulator has been in service at least for 3 months after servicing for reclassification purposes, before testing the PCB concentration?	_____	_____	_____
B,C	Do you maintain separate containers for PCBs removed from PCB Transformers and PCBs removed from PCB-contaminated Electrical Equipment (including transformers)?	_____	_____	_____
B, C	If PCBs from PCB Transformers and PCBs from PCB-contaminated Electrical Equipment are inadvertently mixed, do you dispose of the dielectric fluid as if the entire mixture contains PCBs at concentrations of > 500 ppm (i.e., in an incinerator)?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
B,C,D	Are PCBs removed during servicing captured and either reused as dielectric fluid or disposed of in accordance with 40 CFR 761.60?	_____	_____	_____
C	Do you service PCB-containing transformers with dielectric fluid at the same or lower PCB concentration category?	_____	_____	_____
C	Do you dispose of any PCB Transformers that require removal of the transformer coil from the transformer casing?	_____	_____	_____
C	If the PCB concentration remains ≥ 500 ppm after servicing for reclassification, do you either repeat the reclassification process or remove the transformer from service?	_____	_____	_____
D	If servicing of a railroad transformer involves removal of the coil from the casing, do you replace the dielectric fluid with fluid containing PCBs at concentrations of < 50 ppm?	_____	_____	_____
D	If servicing of the railroad transformer is conducted to reduce the PCB concentration in the dielectric fluid, do you measure the PCB concentration immediately after servicing and again 12 to 24 months afterwards?	_____	_____	_____
D	Do you verify that a railroad transformer has been in service for at least 3 months after servicing before testing the PCB concentration for reclassification purposes?	_____	_____	_____

Continued on next page

Module		1	2	3
		Yes	No	N/A
D	Do you store all PCB dielectric fluid used to service railroad transformers in accordance with 40 CFR 761.65?	_____	_____	_____

For all applicable questions, your answer should be yes. If your answer was no, read the referenced module for further guidance.

CHAPTER 5

INSPECTING PCB ITEMS

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5.1 INTRODUCTION

This chapter covers the TSCA regulations for inspecting PCB Transformers in use or stored for reuse and PCB Items stored for disposal. The TSCA inspection requirements are found primarily at 40 CFR 761.30 and 40 CFR 761.65. Inspection of other PCB Items in use is not addressed in TSCA; however, if you have another type of PCB Item, read Section 5.2, "General Requirements and Considerations," to determine if any other requirements apply.

This guidance does not cover EPA inspections of PCB facilities or facility records.

DOE Personnel should refer to this guidance to determine whether periodic inspections are required and to verify that their inspection procedures are in compliance with applicable regulations.

5.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

5.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- PCB Item,
- PCB Transformer, and
- Storage for disposal.

When confronted with an unfamiliar term, consult the Glossary.

5.2.2 SPILLS OR LEAKS DISCOVERED AS A RESULT OF INSPECTION

If a spill or leak of PCBs is discovered as a result of the inspection of a PCB Item, the DOE Personnel responsible for the item must follow the requirements specified in the appropriate section of this chapter. In addition, DOE Personnel should refer to Chapter 12, "Spill Reporting and Cleanup," for additional guidance for responding to spills and leaks.

5.2.3 CONFLICTING REGULATORY REQUIREMENTS

DOE Order, 5400.1 "General Environmental Protection Program" states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environmental Guidance (EH-23) for instructions on how to proceed. EH-23 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

5.2.4 STATE REGULATIONS

The state in which the PCB Items are located may require more frequent or more comprehensive inspections of PCB Items than those required by the Federal regulations. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

5.2.5 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

The modules of this chapter describe the TSCA requirements for inspecting PCB Items for leaks. Normally, this activity would not lead to situations in which PCBs or PCB Items would become mixed with RCRA hazardous waste. However, if PCBs or PCB Items become mixed with RCRA hazardous waste, they are subject to:

- Applicable restrictions on activities involving RCRA hazardous waste, as described in 40 CFR 262-266, and 268;
- DOE Order 5400.1, "General Environmental Protection Program"; and
- DOE Order 5400.3, "Hazardous and Radioactive Mixed Waste Program."

If, as a result of its contamination with RCRA hazardous waste, PCB material is no longer fit for service, it would no longer be considered in use and therefore must be disposed of. See Chapter 7, "Storage" for the TSCA requirements for PCB materials stored for disposal and Chapter 9, "Disposal" for the TSCA disposal requirements.

5.2.6 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB Items contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

5.3 MASTER FLOW CHART: INSPECTING PCB ITEMS

The flow chart and the supplement information on the following pages will help you to comply with the TSCA requirements applicable to the inspection of PCB Items.

MASTER FLOW CHART: INSPECTING PCB ITEMS
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: INSPECTING PCB ITEMS

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Material."

This chapter covers the inspection requirements for PCB Items in use or stored for reuse.

Historic uses of PCBs that are not authorized under the TSCA regulations described in Chapter 3 may result in a violation.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 5.2, "General Requirements and Considerations," which contains information about inspection requirements that could apply to any PCB Item.

Step 2 **What is the status of the PCB Item?** Inspection requirements for PCB Items in use or in storage for reuse are discussed in Module 5A. Module 5B discusses the inspection requirements for PCB Items in storage for disposal.

5.4 MODULE 5A: PCB ITEMS IN USE OR STORED FOR REUSE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 5.3 to arrive at Module 5A.

Reminder

PCB Items → In use or in storage for reuse → Module 5A

This module describes the inspection requirements that apply to all PCB Items in use or stored for reuse.

The flow chart on the next page guides you through the process of identifying applicable requirements to ensure that inspections comply with the TSCA regulations.

MODULE 5A
5.4 PCB Items in Use or Stored for Reuse

SUPPLEMENTAL INFORMATION FOR SECTION 5.4, PCB ITEMS IN USE OR STORED FOR REUSE

Step 1 **Start** -- This module describes the inspection requirements that apply to all PCB Items in use or stored for reuse.

Step 2 **What is the PCB Item to be inspected?** PCB Transformers are defined at 40 CFR 761.3 as transformers that contain dielectric fluid with a PCB concentration of ≥ 500 ppm. The inspection requirements for PCB Transformers are described in Steps 2A through 2C. The requirements for electromagnets are described in Step 2D. For all other PCB Items in use or stored for reuse, proceed to Step 2E.

Step 2A A visual inspection of each PCB Transformer in use or stored for reuse must be performed at least once every 3 months. These inspections may take place any time during the following 3-month periods: January-March, April-June, July-September, and October-December, as long as there is a minimum of 30 days between inspections. The visual inspection must include an investigation for any leak of dielectric fluid on or around the transformer. The extent of the visual inspection depends on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected [40 CFR 761.30(a)(1)(ix)].

Step 2B If a PCB Transformer is found to have a leak that results in any quantity of PCBs running off or about to run off the external surface of the transformer, the transformer must be repaired or replaced to eliminate the source of the leak [40 CFR 761.30(a)(1)(x)].

Cleanup of the released PCBs must be initiated as soon as possible, but in no case later than 48 hours following its discovery. Any leaking material must be cleaned up (see Chapter 12 "Spill Reporting and Cleanup") and properly disposed of according to the disposal requirements of 40 CFR 761.60 (see Chapter 9, "Disposal") [40 CFR 761.30(a)(1)(x)].

Until appropriate action is completed, any active leak of PCBs must be contained to prevent exposure of humans or the environment and inspected daily to verify containment of the leak. Trenches, dikes, buckets, and pans are examples of proper containment measures [40 CFR 761.30(a)(1)(x)].

Step 2C A reduced visual inspection frequency of at least once every 12 months applies to PCB Transformers that use either of the following risk reduction measures:

- An impervious, undrained, secondary containment capacity equal to at least 100% of the total dielectric fluid volume of all transformers so contained, or
- The transformers have been tested and found to contain PCBs at a concentration of $< 60,000$ ppm (after 3 months of in-service use if the transformer has been serviced for purposes of reducing the PCB concentration).

These inspections may take place any time during the calendar year as long as there is a minimum of 180 days between inspections [40 CFR 761.30(a)(1)(xiii)].

Clarification

Transformers that Pose a Risk to Food or Feed

Although there is a requirement at 40 CFR 761.30(a)(1)(xiv) to require more frequent inspections of transformers posing a risk to food or feed, the use of such transformers is prohibited at 40 CFR 761.30(a)(1)(i). This is an inconsistency in the regulations. Since the use and storage for use of transformers that pose a risk to food or feed is prohibited, the inspection requirements at 40 CFR 761.30(a)(1)(xiv) do not apply.

Step 2D **Are electromagnets containing PCBs in use or stored for reuse?** Electromagnets containing PCBs at concentrations of 50 to 500 ppm that pose an exposure risk to food or feed must be visually inspected at least once a week [40 CFR 761.30(h)(1)(ii)] (USEPA 1992).

Clarification

Electromagnets that Pose a Risk to Food or Feed

Please note that 40 CFR 761.30(h)(1)(i) prohibits the use or storage for reuse of electromagnets with PCB concentrations of > 500 ppm that pose an exposure risk to food or feed (see Chapter 3, "Prohibited and Authorized Activities"). As a result, weekly inspections apply only to electromagnets with PCB concentrations of 50 to 500 ppm.

Step 2E No inspections are required for other PCB Items in use or stored for reuse (including PCB-contaminated Transformers, which have a PCB concentration of ≥ 50 ppm but < 500 ppm).

Although inspections are not required, best management practices (BMPs) could provide for periodic inspections of all PCB Items in use or stored for reuse to reduce liability associated with these items.

5.5 MODULE 5B: PCBs AND PCB ITEMS STORED FOR DISPOSAL

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 5.3 to arrive at Module 5B.

Reminder

PCB Items → In storage for disposal → Module 5B

This module describes the TSCA inspection requirements for PCB Items stored for disposal.

The flow chart on the next page guides you through the process of identifying applicable requirements to ensure that inspections comply with the TSCA regulations.

MODULE 5B
5.5 PCBs and PCB Items Stored for Disposal

SUPPLEMENTAL INFORMATION FOR SECTION 5.5, PCB ITEMS STORED FOR DISPOSAL

- Step 1** **Start** -- This module describes the TSCA inspection requirements for PCB Items stored for disposal.
- Step 2** **Where are PCB Items stored?** For PCB Items that are required to be stored in a PCB storage facility prior to disposal (refer to Chapter 7, "Storage," for guidance), proceed to Steps 2A and 2C. If undrained, non-leaking, and structurally undamaged PCB Large High-voltage Capacitors and PCB-contaminated Electrical Equipment is stored **on pallets next to a storage facility** that meets the requirements of 40 CFR 761.65(b), the applicable inspection requirements are described in Steps 2B and 2C.
- Step 2A** PCB Large High-voltage Capacitors and PCB-contaminated Electrical Equipment temporarily stored on pallets next to a storage facility must be checked for leaks weekly [40 CFR 761.65(c)(2)].
- Step 2B** All PCB Articles and PCB Containers in storage for disposal must be checked for leaks at least once every 30 days [40 CFR 761.65(c)(5)].
- Step 2C** Any leaking PCB Articles and PCB Containers and their contents must be transferred immediately to properly marked non-leaking containers. Any spilled or leaked materials must be cleaned up immediately, using sorbents or other adequate means, and the PCB-contaminated materials and residues must be disposed of in accordance with 40 CFR 761.60(a)(4) (see Chapter 9, "Disposal," and Chapter 12, "Spill Reporting and Cleanup") [40 CFR 761.65(c)(5)].

5.6 REFERENCES

None.

5.7 CHECKLIST FOR CHAPTER 5 -- INSPECTING PCB ITEMS

The following checklist allows PCB managers to determine how well they are complying with the TSCA regulations for inspecting PCB Items. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of noncompliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Do applicable state regulations exist that require additional inspections?	_____	_____	_____
	Do your activities comply with these state regulations?	_____	_____	_____
General	Do inspections comply with all applicable regulations, including those not directly related to PCBs (e.g., PCB Items contaminated with RCRA hazardous waste or radioactive material)?	_____	_____	_____
A	Are PCB Transformers in use or stored for reuse and located within an area that has an impervious, undrained, secondary containment capacity of 100% of the total volume of dielectric fluid of all such transformers?	_____	_____	_____
	Is a visual inspection conducted at least once every 12 months?	_____	_____	_____
	Is there a minimum of 180 days between required inspections?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
A	Do PCB Transformers in use or stored for reuse have a PCB concentration of < 60,000 ppm?	_____	_____	_____
	Is a visual inspection conducted at least once every 12 months?	_____	_____	_____
	Is there a minimum of 180 days between required inspections?	_____	_____	_____
A	Is a visual inspection conducted for each PCB Transformer in use or stored for reuse at least once every 3 months?	_____	_____	_____
	Is there a minimum of 30 days between required inspections?	_____	_____	_____
A	If a PCB Transformer is found to have a leak, is the transformer repaired or replaced?	_____	_____	_____
A	If a PCB Transformer is found to have a leak, is cleanup initiated within 48 hours of discovery?	_____	_____	_____
A	Are active leaks from PCB Transformers contained to prevent exposure of humans and the environment?	_____	_____	_____
A	Are leaking materials cleaned up and properly disposed of?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
A	Are weekly inspections conducted for all electromagnets that are in use or stored for reuse and that pose an exposure risk to food or feed?	_____	_____	_____
B	Are undrained PCB Large High-voltage Capacitors and PCB-contaminated Electrical Equipment stored for disposal on pallets next to a storage facility?	_____	_____	_____
	Are they inspected for leaks weekly?	_____	_____	_____
B	Are all PCB Articles and PCB Containers checked for leaks at least once every 30 days?	_____	_____	_____
B	If leaking PCB Articles or PCB Containers are discovered, are their contents transferred immediately to properly marked, non-leaking containers?	_____	_____	_____
B	If leaking PCB Articles or PCB Containers are discovered, are the spilled or leaked materials cleaned up immediately and disposed of properly?	_____	_____	_____

For all applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 6

MARKING

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6.1 INTRODUCTION

This chapter addresses the marking required by Federal regulations for PCB Items, PCB storage areas, PCB Transformer locations, and PCB transport vehicles. It does not cover any additional marking that may be required by the U.S. Department of Transportation (DOT).

As defined in 40 CFR 761.3, "mark" means the descriptive name, instructions, cautions, or other information applied to PCB Items or other objects subject to these regulations.

DOE Personnel should refer to this guidance when storing, transporting, or installing PCB Items. In addition, DOE Personnel should be aware that marking is required for the following items that do not contain PCBs:

- Large Low-voltage Capacitors,
- Small Capacitors normally used in alternating current circuits, and
- Fluorescent light ballasts.

6.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

6.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Mark,
- Marked, and
- Transport vehicle.

When confronted with an unfamiliar term, consult the Glossary.

6.2.2 PCB MARKS

According to 40 CFR 761.3, "marked" means the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or any other method that meets the requirements discussed below. The TSCA PCB regulations specify the use of two marks: a large mark and, where this mark is too large to be affixed to the PCB Items, a small mark. Both marks may be reduced in size proportionally to allow greater flexibility in applying them to various sizes of PCB Items. This section describes the requirements for the marks themselves; the modules in this chapter explain when these marks must be applied.

The large PCB mark, "Mark ML," shown in Figure 6.1, is the mark most often required by the TSCA regulations. The large PCB mark is referred to as "Mark ML" throughout this chapter. When Mark ML is required:

- The letters and striping must appear on a white or yellow background,
- The mark must be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Item, and
- The mark must be ≥ 15.25 centimeters (6 inches) on each side.

If the PCB Item is too small to accommodate the Mark ML, the mark may be reduced in size proportionally to a minimum of 5 centimeters (2 inches) on each side [40 CFR 761.45(a)].

The small PCB mark, "Mark MS," shown in Figure 6.2, may be used instead of Mark ML, where Mark ML is required, but the PCB Item is too small to accommodate the smallest permissible size of Mark ML (i.e., 5 centimeters or 2 inches on each side) [40 CFR 761.40(f)]. The small PCB mark is referred to as "Mark MS" throughout this chapter. When Mark MS is used:

- The letters and striping must appear on a white or yellow background,
- The mark must be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Item, and
- The mark must be a rectangle measuring 2.5 centimeters high and 5 centimeters wide (1 inch high and 2 inches wide).

If the PCB Item is too small to accommodate this size, the mark may be reduced in size proportionately to a minimum of 1 centimeter high and 2 centimeter wide (0.4 inch high and 0.8 inch wide) [40 CFR 761.45(b)].

Pre-printed adhesive labels that meet the requirements for Mark ML and Mark MS are commercially available from companies supplying safety equipment and labels.

Figure 6.1
MARK ML

Figure 6.2
MARK MS

6.2.3 PLACEMENT OF THE MARK

All marks for PCB Items and transport vehicles must be placed in a position on the exterior of the PCB Item or transport vehicle so that the marks can be easily read by any person inspecting or servicing the marked PCB Items or transport vehicles [40 CFR 761.40(h)]. The areas that must be marked in PCB Transformer locations are described in Module 6A.

Marks required on PCB storage areas should also be placed in prominent positions on all doors and entry or access points so that they can be easily read.

6.2.4 PCB ITEMS IN TEMPORARY STORAGE

A notation must be attached to each PCB Item described in Section 7.6.4 that is in temporary storage, indicating the date the item was removed from service (see Chapter 7, "Storage" [40 CFR 761.65(c)(1)]).

6.2.5 ITEMS THAT DO NOT CONTAIN PCBs

Some PCB Items manufactured (i.e., built) between July 1, 1978, and July 1, 1998, that do not contain PCBs at any concentration must be marked by the manufacturer at the time of manufacture with the statement "No PCBs." These PCB Items are:

- Large Low-voltage Capacitors,
- Small Capacitors normally used in alternating current circuits, and
- Fluorescent light ballasts.

The mark must be equal in durability and readability to other markings that indicate electrical information, part numbers, or the manufacturer's name. This marking

requirement applies only to items built domestically or abroad after June 30, 1978 [40 CFR 761.40(g)].

6.2.6 UNMARKED PCB ITEMS

If PCB Items are discovered that are not marked, they must be marked as soon as possible in accordance with the marking requirements described in the modules of this chapter. If the PCB concentration of unmarked items is unknown, refer to Chapter 2 for information on how to determine PCB concentration.

6.2.7 MARKING CONTAINERS OF PCBs MANUFACTURED UNDER AN EPA-AUTHORIZED EXEMPTION

Chemical substances or mixtures that are manufactured after July 2, 1979 (i.e., manufactured under an EPA exemption that permits such manufacturing) and that contain PCBs at concentrations of < 500 ppm (0.05% on a dry weight basis) must be marked by the manufacturer in accordance with any conditions specified in the exemption. Unless specified in the exemption, such containers are not subject to any other marking requirement [40 CFR 761.40(i)].

This marking requirement applies only to containers of chemical substances or mixtures of PCBs, including PCBs that are a byproduct or impurity. PCB Articles and PCB Equipment into which the chemical substances or mixtures of PCBs are processed are subject to the marking requirements for PCB Items as described in the modules of this chapter [40 CFR 761.40(i)].

6.2.8 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program" states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environment (EH-20) for instructions on how to proceed. EH-20 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

6.2.9 STATE REGULATIONS

The state in which the PCB Items or PCB storage areas are located or transport vehicles operate may have additional marking regulations. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

6.2.10 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

PCB Items, PCB storage areas, and vehicles used to transport PCBs that are contaminated with or contain RCRA hazardous waste are subject to:

- Applicable PCB marking requirements, as defined in Modules A through C;
- Applicable RCRA hazardous waste marking requirements, as defined in 40 CFR Part 262 and 40 CFR 268.50(a)(2);
- Applicable DOT marking requirements defined in 49 CFR Part 172;
- DOE Order 5400.1, "General Environmental Protection Program;"
- DOE Order 5400.3, "Hazardous and Radioactive Mixed Waste Program;" and
- DOE Order 5480.3, "Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes."

As you use the modules in this chapter, keep in mind that you must meet all of the applicable requirements. If they conflict with the TSCA marking requirements, TSCA provides that the more stringent requirements apply [40 CFR 761.1(e)]. It is important to note that the RCRA regulations apply regardless of the concentration of PCBs. Thus, PCB Items with PCB concentrations of < 50 ppm or storage areas or vehicles containing such items may not be subject to TSCA, but may be subject to RCRA requirements.

6.2.11 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCB or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentrations of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

6.3 MASTER FLOW CHART: MARKING

The flow chart and the supplemental information on the following pages will help you identify the marking requirements applicable to your situation.

MASTER FLOW CHART: MARKING Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: MARKING

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterizations of PCB Materials."

This chapter covers the marking requirements for PCB Items, PCB transport vehicles, PCB Transformer locations, and PCB storage areas.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 6.2, "General Requirements and Considerations," which contains information about the requirements that could apply to any PCB Items, PCB transport vehicles, or areas where PCBs may be located.

Step 2 **Which marking requirement are you interested in?** To determine the marking requirements for PCB Items, proceed to Step 3. The marking requirements for PCB transport vehicles, PCB Transformer locations, and PCB storage areas are discussed in Module 6A.

Step 3 **What is the PCB concentration?** The TSCA marking requirements for PCB Items differ depending on the PCB concentration of the item. The marking requirements for PCB Items with PCB concentrations of < 50 ppm are discussed in Module 6B. If you have a PCB Item with a PCB concentration of ≥ 50 ppm, continue to Step 4.

Caution

The Anti-dilution Rule (Section 2.4.2) also applies to the marking of PCBs. PCBs that have been diluted must be considered to have the original PCB concentration for marking purposes.

Step 4 **Do you have a transformer that contains PCBs at a concentration of < 500 ppm?** The marking requirements for PCB Transformers (i.e., transformers with PCB concentrations of ≥ 500 ppm) and other PCB Items with PCB concentrations of ≥ 50 ppm are discussed in Module 6C. Transformers (including mineral oil transformers and transformers used in railroad locomotives and self-propelled cars) that have a PCB concentration of ≥ 50 ppm but < 500 ppm, or that are assumed to have such a concentration (see Chapter 2, Section 2.4), are exempt from the marking requirements

for other PCB Items with PCB concentrations of ≥ 50 ppm. The marking requirements for such transformers are discussed in Module 6B.

6.4 MODULE 6A: PCB TRANSPORT VEHICLES, PCB TRANSFORMER LOCATIONS, AND PCB STORAGE AREAS

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 6.3 to arrive at Module 6A.

Reminder

PCB Items, PCB transport vehicles, PCB Transformer locations, and PCB storage areas → PCB transport vehicles, PCB Transformer locations, and PCB storage areas → Module 6A

This module describes the TSCA marking requirements for PCB transport vehicles, PCB Transformer locations, and PCB storage areas. Review Section 6.2.2, as necessary, for a description of Mark ML. Read each of the following sections that may apply:

- Section 6.4.1, PCB Transport Vehicles;
- Section 6.4.2, PCB Storage Areas; and
- Section 6.4.3, PCB Transformer Locations.

6.4.1 PCB TRANSPORT VEHICLES

A transport vehicle must be marked on each end and each side with Mark ML if it is loaded with:

- PCB Containers that contain > 45 kilograms (99.4 pounds) of liquid PCBs with a concentration ≥ 50 ppm PCBs, or
- One or more PCB Transformers (i.e., transformers with PCB concentrations of ≥ 500 ppm) [761.40(b) and (e)].

The TSCA regulations do not require PCB marks on other vehicles transporting PCBs (e.g., in quantities < 45 kilograms of liquid PCBs).

Regulatory Issue

Vehicles Not Travelling on Public Roads

DOE has asked EPA to address the question of whether vehicles that are not travelling on public roads (e.g., forklifts) must be marked when transferring containers or transformers between locations within facility boundaries (USDOE 1991). Until EPA confirms that marking of such vehicles is not required, marked vehicles are to be used for on-site transport.

6.4.2 PCB STORAGE AREAS

PCB storage areas subject to the requirements of 40 CFR 761.65(b) or 40 CFR 761.65(c)(7) (see Chapter 7, "Storage") must be marked with Mark ML [761.40(a)(10)].

The PCB marks should be clearly visible at any point of access to the storage area.

6.4.3 PCB TRANSFORMER LOCATIONS

All of the following areas in a PCB Transformer location must be marked with Mark ML [40 CFR 761.40(j)(1)]:

- Vault door,
- Machinery room door,
- Fence,
- Hallway, or
- Means of access to a PCB Transformer, other than grates and manhole covers.

TSCA marking is not required for transformer locations that do not contain a PCB Transformer. *One of the purposes for marking the access to areas containing PCB Transformers is to give firefighting personnel notice that these transformers are present in the event of a fire-related incident. To determine the best location for the mark, consult local emergency response personnel (e.g., the fire department).*

Clarification

Alternative Marking for PCB Transformer Locations

A mark other than Mark ML may be used in a PCB Transformer location provided all of the following conditions are met:

- The program using such an alternative mark was initiated prior to August 15, 1985, and this can be substantiated with documentation;
- Prior to August 15, 1985, coordination between the transformer owner and the primary fire department occurred, and the primary fire department knows, accepts, and recognizes what the alternative mark means, and that this understanding with the fire department can be substantiated with documentation;
- The Regional Administrator in the appropriate EPA Region was informed in writing of the use of the alternative mark by October 3, 1988, and was provided with documentation that demonstrates that:
 - The program began before August 15, 1985; and
 - Prior to that date the primary fire department knew, accepted, and recognized the meaning of the mark, and included this information in its firefighting training; and
- The EPA Regional Administrator approved the use of the alternative mark in writing.

Any alternative mark must be placed on the vault door, machinery room door, fence, hallway, or means of access to the PCB Transformer (other than grates and manhole covers). The alternative mark must be placed so that it can be easily read by emergency response personnel fighting a fire involving the equipment [40 CFR 761.40(j)(2) and (3)].

6.5 MODULE 6B: PCB ITEMS WITH PCB CONCENTRATIONS OF < 50 PPM AND TRANSFORMERS WITH PCB CONCENTRATIONS OF < 500 PPM

To ensure that you are in the correct module, the box below provides a reminder of the decision paths that you should have taken in the Master Flow Chart in Section 6.3 to arrive at Module 6B.

Reminder

PCB Items, PCB transport vehicles, PCB Transformer locations, and PCB storage areas → PCB Items → < 50 ppm PCBs → Module 6B

PCB Items, PCB transport vehicles, PCB Transformer locations, and PCB storage areas → PCB Items → ≥ 50 ppm PCBs → Transformers < 500 ppm PCBs → Module 6B

This module describes the TSCA marking requirements for most PCB Items with a PCB concentration of < 50 ppm, as well as all transformers with a PCB concentration of < 500 ppm.

PCB Items with a PCB concentration of < 50 ppm are not subject to the marking requirements at 40 CFR 761.40, with the following exception:

- When PCBs at a PCB concentration of < 50 ppm are used in compressors, or PCBs are used in the liquid of natural gas pipelines at a PCB concentration of < 50 ppm, the PCB Item must be marked with Mark ML [40 CFR 761.30(i)]. For more information on the specifications of Mark ML, review Section 6.2.2.

Transformers are exempt from the marking requirements if they contain a PCB concentration of < 500 ppm (USEPA 1991).

6.6 MODULE 6C: OTHER PCB ITEMS

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 6.3 to arrive at Module 6C.

Reminder Box

PCB Items, PCB transport vehicles, PCB Transformer locations, and PCB storage areas → PCB Items → ≥ 50 ppm PCBs → Other PCB Items → Module 6C

This module describes the marking requirements for other PCB Items with a PCB concentration ≥ 50 ppm. Review Section 6.2.2, as necessary for a review of the specification for Mark ML and Mark MS.

Read each of the following sections that may apply:

- Section 6.6.1, PCB Articles,
- Section 6.6.2, PCB Equipment,
- Section 6.6.3, PCB Containers, and
- Section 6.6.4, PCB Article Containers.

6.6.1 PCB ARTICLES

The following PCB Articles containing PCB concentrations of ≥ 50 ppm (USEPA 1991) must be marked with Mark ML:

- Electric motors using PCB coolants,
- Hydraulic systems using PCB hydraulic fluid, and
- Heat transfer systems (other than PCB Transformers) using PCBs [40 CFR 761.40(a)(6) - (8)].

In addition, all PCB Large High-voltage Capacitors with PCB concentrations of ≥ 50 ppm:

- Must be marked individually with Mark ML, or
- If one or more PCB Large High-voltage Capacitors are installed in a protected location such as on a power pole, or structure, or behind a fence, then the pole, structure, or fence must be marked with Mark ML, and
- A record or procedure identifying the PCB Large High-voltage Capacitors must be maintained by the owner or operator at the protected location [40 CFR 761.40(c)(2)].

If you later decide to remove a PCB Large High-voltage Capacitor from the protected location, you must then mark it with Mark ML, if it is not already marked.

PCB Large Low-voltage Capacitors with concentrations of ≥ 50 ppm PCBs must be marked with Mark ML at the time they are removed from use [40 CFR 761.40(a)(5)].

All PCB Transformers with concentrations of ≥ 500 ppm PCBs must be marked with Mark ML [40 CFR 761.40(c)(1)].

Although TSCA does not require marking for PCB Items such as PCB Large Low-voltage Capacitors until they are removed from use, DOE Personnel should consider marking these items so they can be readily identified in case of a spill, leak, or fire-related incident.

6.6.2 PCB EQUIPMENT

PCB Equipment containing a PCB Transformer (i.e., a transformer with a PCB concentration of ≥ 500 ppm) or a PCB Large High-voltage Capacitor must be marked with Mark ML at the time the equipment is removed from use, if not already marked [40 CFR 761.40(a)(4)].

All PCB Equipment containing a PCB Small Capacitor must be marked at the time of manufacture with the statement, "This equipment contains PCB Capacitor(s)." The mark must be of the same size as Mark ML [40 CFR 761.40(d)].

6.6.3 PCB CONTAINERS

PCB Containers containing PCBs at a concentration of ≥ 50 ppm must be marked with Mark ML [40 CFR 761.40(a)(1)]. Remember that PCB containers storing liquids that are stored for less than 30 days in areas that do not meet the storage facility specifications described in Chapter 7, "Storage," must be marked with a notation that states that the PCB concentration in the container does not exceed 500 ppm.

6.6.4 PCB ARTICLE CONTAINERS

PCB Article Containers must be marked with Mark ML if they contain any of the following PCB Items:

- PCB Containers,
- PCB Transformers,
- PCB Large High-voltage Capacitors,
- PCB Large Low-voltage Capacitors,
- PCB Equipment containing a PCB Transformer or a PCB Large High-voltage Capacitor,
- Electric motors using PCB coolants,
- Hydraulic systems using PCB hydraulic fluid, and
- Heat transfer systems (other than PCB Transformers) using PCBs [40 CFR 761.40(a)(9)].

The PCB Items contained in the PCB Article Container must be marked according to the requirements for the marking of PCB Items described in this module.

6.7 REFERENCES

USDOE. 1991. U.S. Department of Energy. Office of Environmental Guidance. Comments on disposal of polychlorinated biphenyls (PCBs) advance notice of proposed rulemaking (ANPR), 56 *Federal Register* 26738. August 9, 1991.

USEPA. 1991. U.S. Environmental Protection Agency. Telephone discussion between Thomas Simons, Operations Branch, Chemical Management Division, Office of Pollution Prevention and Toxics and Energetics, Inc., Columbia, MD. December 13, 1991.

6.8 CHECKLIST FOR CHAPTER 6 -- MARKING

The following checklist allows PCB managers to determine how well they are complying with TSCA PCB marking regulations. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of non-compliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Are you using PCB marks that meet the color, durability, and size requirements described in Section 6.2.2?	_____	_____	_____
General	Are your PCB marks on PCB Items and transport vehicles in a position where they may be easily read by inspectors?	_____	_____	_____
General	Are you complying with all other applicable Federal, state, and DOE marking requirements for your PCB material?	_____	_____	_____
A	Do you mark, on each end and side, all vehicles that transport more than 45 kilograms of liquid PCBs with a PCB concentration of ≥ 50 ppm?	_____	_____	_____
A	Do you mark, on each end and side, all vehicles that transport one or more PCB Transformers?	_____	_____	_____
A	Are all means of access to your PCB Transformers at PCB Transformer locations (other than grates and manhole covers) properly marked?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
A	Are alternative marks used to mark PCB Transformer locations?	_____	_____	_____
	Have they been approved by the EPA Regional Administrator?	_____	_____	_____
	Can the alternative marks be easily read by emergency personnel if an emergency situation arises?	_____	_____	_____
A	Are all PCB storage locations subject to the requirements of 40 CFR 761.65(b) or (c)(7) marked with Mark ML so that a PCB mark is clearly visible from each point of access to the storage area?	_____	_____	_____
B	Are all compressors and natural gas pipelines containing PCBs marked with Mark ML?	_____	_____	_____
C	Are all electric motors, hydraulic systems, heat transfer systems, PCB Transformers, PCB Large High-voltage Capacitors, PCB Containers, and PCB Article Containers marked with Mark ML, as appropriate?	_____	_____	_____
C	Have any PCB Large High-voltage Capacitors been removed from use in a protected location?			
	Have they been marked with Mark ML?	_____	_____	_____

Continued on next page

Module	1 Yes	2 No	3 N/A
C			
Has any PCB Equipment containing a PCB Transformer or a PCB Large High-voltage Capacitor been removed from use?	_____	_____	_____
Have they been marked with Mark ML?	_____	_____	_____

For all applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 7

STORAGE

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7.1 INTRODUCTION

This chapter covers the TSCA regulations applicable to the storage of PCBs and storage of PCB Items for disposal, use, and reuse. These regulations are primarily located at 40 CFR 761.65.

TSCA requirements that apply to the commercial storage of PCBs and PCB Items are not expected to apply to most DOE facilities. The details of the commercial storage requirements, which concern:

- Approval of commercial storers of PCB waste [40 CFR 761.65(d)],
- Closure of commercial storage facilities [40 CFR 761.65(e)], and
- Release of the commercial storage facility owner/operator following final closure [40 CFR 761.65(h)]

are beyond the scope of this manual.

In addition, this chapter does not cover the following storage requirements, as they are not applicable to Federal facilities [40 CFR 761.65(j)]:

- Closure cost estimate [40 CFR 761.65(f)], and
- Financial assurance for closure [40 CFR 761.65(g)].

DOE Personnel should refer to the guidance in this chapter in preparation of storing PCB materials and properly designing, installing, or upgrading PCB storage facilities. DOE Personnel should also read this chapter to verify that existing PCB storage facilities and PCB materials currently in storage comply with applicable regulations.

7.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

7.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in the chapter:

- Capacitor,
- Small Capacitor,
- Large High-voltage Capacitor,
- Large Low-voltage Capacitor,
- Commercial storer of PCB waste,
- Fluorescent light ballast,
- Mineral Oil PCB Transformer,
- Municipal solid wastes, and
- Storage for disposal.

When confronted with an unfamiliar term, consult the Glossary.

7.2.2 PROHIBITED STORAGE

■ Storage Near Food or Feed

The storage of any PCB materials in areas in which food or animal feed are produced is **prohibited** (no minimum PCB concentrations are specified). Such storage is prohibited for any PCB-containing materials that conceivably would cause animal feed to become contaminated with PCBs either as a result of normal use or as a result of an accident, breakage, or other mishap [21 CFR 500.45(b)(30)(iii)]. Furthermore, TSCA regulations prohibit the storage for reuse of any PCB Transformers, PCB Large High-voltage Capacitors, PCB Large Low-voltage Capacitors, or electromagnets that pose an exposure risk to food or animal feed [40 CFR 761.30(a)(1)(i), (h)(1)(i), and (l)(1)(i)]. *Do not store these PCB Items near cafeterias or in food vending machine areas.*

■ Storage of Leaking PCB Items

The storage of leaking PCB Items is **prohibited**, unless:

- The leak is plugged and the surface decontaminated prior to storage; or
- The leaking container or item is transferred immediately to a marked, non-leaking container and overpacked with sufficient sorbent to absorb remaining liquids [40 CFR 761.65(c)(5)]; or
- The EPA Regional office (and any pertinent state regulatory agencies) is made aware of the proposed mode of storage and specifically approve alternative procedures for containing the leak (such as draining the item, insofar as possible, and storing it over a drip pan until remaining material drips out, and then placing the item into an appropriate container).

Refer to Chapter 12, "Spill Reporting and Cleanup," for detailed guidance for spilled or leaking PCBs and PCB Items.

7.2.3 LABORATORIES AND SAMPLES

Laboratories must either [40 CFR 761.65(i)]:

- Store their PCB samples in a PCB storage facility that complies with the storage facility requirements described in Module 7C of this chapter; or
- Meet the requirements of 40 CFR 761.65(d), (e), and (h) for commercial storers.

The TSCA requirements at 40 CFR 761.65(d),(e), and (h) are beyond the scope of this manual.

In addition, laboratories are subject to manifesting requirements described in Chapter 8, "Transport of PCBs and PCB Items," and the notification requirements for commercial storers, which are described in Chapter 11, "PCB Waste Activity Notification."

7.2.4 UNDERGROUND STORAGE TANKS

Storage of PCB materials in underground storage tanks must comply with any applicable regulations at 40 CFR Part 280. For a guide to these regulations, see the Office of Environmental Guidance's publication "Regulated Underground Storage Tanks (USTs) Guidance" (USDOE 1992).

7.2.5 CONTAINMENT AND CLEANUP

It is prudent to take appropriate precautions at storage facilities to prevent material containing even low concentrations of PCBs from entering the environment. Such releases could trigger a variety of additional reporting and cleanup requirements, discussed further in Chapter 12, "Spill Reporting and Cleanup."

7.2.6 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environment (EH-20) for instructions on how to proceed. EH-20 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

7.2.7 STATE REGULATIONS

The state in which the PCBs or PCB Items are located may have additional regulations that apply to PCB storage. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

7.2.8 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

This chapter covers the TSCA requirements for storing PCBs and PCB Items in use or for disposal. PCBs or PCB Items mixed with, contained in, or contaminated with RCRA hazardous waste are subject to:

- Applicable PCB storage requirements, as defined in Modules A through C, and
- Applicable RCRA hazardous waste storage regulations, as defined in 40 CFR Parts 262, 265 and at 40 CFR 268.50(f).

As you use the modules in this chapter, keep in mind that you must comply with both the TSCA and RCRA requirements if your material is a waste. Where TSCA and RCRA conflict, you must apply the more stringent requirements [40 CFR 761.1(e)].

In the case of California list waste containing PCBs at a concentration of ≥ 50 (e.g., in RCRA Satellite Accumulation Areas), the RCRA provision for storage beyond one year for purposes of accumulation does not apply [40 CFR 268.50(f)]. The one-year limit on storage prior to disposal under TSCA takes precedence. It is important to note that the RCRA regulations apply regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be subject to TSCA, but may be subject to RCRA requirements.

7.2.9 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the AEA and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

Regulatory Issue

PCB Waste Contaminated with Radioactive Constituents

EPA may be considering granting authority to the EPA Regional Administrators to allow case-by-case extensions to the 1-year storage for disposal time limit for some PCBs and PCB Items due to factors which may include insufficient disposal capacity, lack of disposal or treatment technology, or lack of time to complete disposal (e.g., through bioremediation).

In addition, EPA has indicated that the PCB storage regulations may not adequately address instances where criticality or radiation protection are an issue. EPA may be considering allowing alternatives to the DOT containers required for storage of PCB materials that are fissionable or suspected to be fissionable.

To address criticality concerns in PCB storage areas where PCB materials contaminated with fissionable radioactive waste are stored, EPA may also consider the use of performance criteria for containment volume rather than specific requirements for curb height.

7.3 MASTER FLOW CHART: STORAGE

The flow chart and the supplement information on the following pages will help you to comply with the TSCA requirements for storing PCBs and PCB Items.

MASTER FLOW CHART: STORAGE
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: STORAGE

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2 "Characterization of PCB Materials."

This chapter covers the storage requirements for PCBs and PCB Items.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 7.2, "General Requirements and Considerations," which contains information about the requirements that could apply to the storage of any PCBs or PCB Items.

Step 2 **What is the PCB concentration?** The TSCA PCB storage regulations differentiate between PCB materials with PCB concentrations of ≥ 50 ppm and PCB materials with PCB concentrations of < 50 ppm. For a discussion of the TSCA storage requirements for PCB materials with a PCB concentration of < 50 ppm, go to Module 7A; otherwise, proceed to Step 3.

Any PCB material that has been diluted is considered to have the original concentration of PCBs for the purpose of the storage regulations [40 CFR 761.1(b)] unless the dilution is the result of reclassification activities. For an in-depth discussion of PCB concentration, read Section 2.4.

Step 3 **Is your PCB material exempt?** The following PCB Articles are exempt from the storage regulations that otherwise apply to PCBs and PCB Items with a PCB concentration of ≥ 50 ppm:

- Non-leaking PCB Small Capacitors – all non-leaking PCB Small Capacitors are exempt from the storage regulations EXCEPT any PCB Small Capacitor owned by any person who manufactures or ever manufactured PCB Capacitors or PCB Equipment and who acquired the PCB Capacitor(s) during the time of manufacture [40 CFR 761.60(b)(6)]. Refer to the Glossary definition of "Small Capacitor." *Since DOE facilities did not generally manufacture PCB Capacitors or PCB Equipment, most of DOE's PCB Small Capacitors, including those found in fluorescent light ballasts or microwave ovens, will be subject to the storage regulations described in Module 7A. Leaking PCB Small Capacitors are fully regulated under TSCA as PCB waste (Module 7C).*
- Some hydraulic systems:

- Hydraulic machines that have been **drained** of PCBs at concentrations of ≥ 50 ppm but < 1000 ppm [40 CFR 761.60(b)(6)]; and
- Hydraulic machines that have been **flushed** of PCBs at concentration of ≥ 1000 ppm [40 CFR 761.60(b)(6)].
- Some PCB Electrical Equipment – electrical equipment with < 500 ppm PCBs that has been drained of free-flowing dielectric fluid [40 CFR 761.65(c)(2)].

If you have one of the exceptions described in this step, go to Module 7A. If you do not have one of the exceptions described in this step, proceed to Step 4.

Step 4 **Is your PCB material a waste or a non-waste?** Waste PCBs and PCB Items (i.e., PCBs and PCB Items stored for disposal) are subject to the storage requirements of 40 CFR 761 Subpart D (at 40 CFR 761.65), as described in Module 7C. Proceed to Module 7C. If your PCB material is a non-waste, proceed to Step 5.

Step 5 **Is your PCB material an exception?** Proceed to Module 7B, which describes the TSCA storage regulations for most PCBs and PCB Items in service, unless you have one of the following exceptions:

- Dielectric fluid containing ≥ 50 ppm PCBs used for servicing transformers [40 CFR 761.30(a)(2)(vi)];
- Dielectric fluid containing ≥ 50 ppm PCBs used for servicing
 - Electromagnets,
 - Switches, or
 - Voltage regulators [40 CFR 761.30(b)(2)(v)];
- Dielectric fluid containing any concentration of PCBs and used for servicing railroad transformers [40 CFR 761.30(b)(2)(v)]; and
- PCBs that are on hand to service or repair mining equipment [40 CFR 761.30(c)(4)].

The types of PCBs listed above that are stored for use or reuse are subject to the storage regulations of 40 CFR 761 Subpart D, described in Module 7C.

7.4 MODULE 7A: EXEMPT PCB MATERIALS

To ensure that you are in the correct module, the box below provides a reminder of the decision paths you should have taken in the Master Flow Chart in Section 7.3 to arrive at Module 7A.

Reminder

PCBs and PCB Items → < 50 ppm → Module 7A

PCBs and PCB Items → ≥ 50 ppm → Exemptions → Module 7A

The Federal TSCA regulations (40 CFR Part 761) do not cover the storage of the following categories of PCBs and PCB Items:

- PCBs and PCB Items stored for disposal, use, or reuse containing PCBs with a concentration of < 50 ppm that are not the result of dilution of materials with higher concentrations of PCB [40 CFR 761.65].
- PCB Articles containing PCBs with a concentration of ≥ 50 ppm that are stored for disposal. These are listed below.
 - Most Small Capacitors:
 - Any non-leaking PCB Small Capacitor not owned or acquired by a capacitor manufacturer or an equipment manufacturer, including those PCB Small Capacitors found in fluorescent light ballasts or microwave ovens [40 CFR 761.60(b)(2)(ii) and (iv)]. *Leaking PCB Small Capacitors are regulated as PCB waste (Module 7C).*
 - Some hydraulic systems:
 - Hydraulic machines that have been drained of fluid with PCB concentrations of ≥ 50 ppm but < 1,000 ppm [40 CFR 761.60(b)(3)], and
 - Hydraulic machines that have been flushed of fluid with PCB concentrations of ≥ 1,000 ppm [CFR 761.60(b)(3)], and

-- Some electrical equipment:

- PCB-contaminated Electrical Equipment that has been drained of free-flowing dielectric fluid [40 CFR 761.60(b)(4)].

Although there are no TSCA regulations pertaining to the storage of these materials, state requirements may apply, as discussed in Section 7.2, "General Requirements and Considerations."

Clarification

Salvaging Operations

The PCB regulations do not impose specific controls on the storage of drained PCB-contaminated Electrical Equipment. However, spills or other controlled discharges of PCBs as a result of scrapping or salvaging operations involving this equipment are regulated as improper disposal and subject the scrapper to spill cleanup requirements (see Chapter 12, "Spill Reporting and Cleanup"). The PCB-containing fluids drained from the equipment during salvaging operations are always regulated as PCB waste under 40 CFR Part 761 (USEPA 1986).

PCB managers should consider more protective storage than is required by TSCA to avoid potential CERCLA liability.

7.5 MODULE 7B: PCBs OR PCB ITEMS STORED FOR USE OR REUSE

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 7.3 to arrive at Module 7B.

Reminder

PCBs and PCB Items $\rightarrow \geq 50$ ppm $\rightarrow$ Most Materials $\rightarrow$ Non-waste $\rightarrow$ Most non-waste
PCBs and PCB Items $\rightarrow$ Module 7B

Except for the prohibited storage discussed in Section 7.2, no TSCA regulations exist for storage of PCBs or PCB Items for future use or reuse. Thus, there are no regulations pertaining to:

- The maximum amount of time that PCBs and PCB Items can be stored for use or reuse,
- The minimum specifications for facilities used to store such PCBs and PCB Items, or
- Notification of such activities to EPA.

Instead, PCBs and PCB Items containing PCBs with a concentration of ≥ 50 ppm stored for use and reuse are **regulated as if they are in use**. For details on regulations applicable to PCBs and PCB Items in use, see Chapters 3, 4, 5, 6, 10, and 11.

Caution

The storage of dielectric fluid used for servicing certain specific types of equipment is restricted by TSCA. As the Master Flow Chart for this chapter indicates, the following PCBs in use or stored for reuse are subject to the TSCA storage regulations described in Module 7C including the 1-year time limit on storage:

Continued on next page

- Dielectric fluid containing PCBs with a concentration of ≥ 50 ppm used for servicing transformers [40 CFR 761.30(a)(2)(vi)];
- Dielectric fluid containing PCBs with a concentration of ≥ 50 ppm used for servicing
 - Electromagnets,
 - Switches, or
 - Voltage regulators [40 CFR 761.30(h)(2)(vi)];
- Dielectric fluid containing any concentration of PCBs and used for servicing railroad transformers [40 CFR 761.30(b)(2)(v)]; and
- PCBs that are on hand to service or repair mining equipment [40 CFR 761.30(c)(4)].

Refer to Module 7C for a discussion of the relevant storage requirements for these PCBs.

In addition, the state in which the facility is located may have regulations that apply to the storage of PCBs or PCB Items for use or reuse that are more stringent than Federal regulations.

Storage containers that have contained PCBs at concentrations of ≥ 50 ppm may be reused if they are decontaminated in accordance with 40 CFR 761.79(a). See Chapter 9, "Disposal," for details. *If PCB Containers are to be reused for storing PCBs or PCB Items, contact the appropriate EPA Region to determine if decontamination is necessary prior to reuse as a PCB Container.*

Regulatory Issue

Storage for Reuse

EPA is concerned that some PCB Items are held in storage for reuse in order to avoid the disposal requirements for PCB waste. Nonetheless, EPA also recognizes that, in some cases, extended storage for reuse may be warranted. EPA is contemplating

Continued on next page

proposing a time limit for storage for reuse, beginning on the date the item is placed into storage for reuse. The promulgation of this time limit would also involve other requirements, such as labelling of the items with the date they were likely placed into storage for reuse, an indication of a location where the item likely would be reused, and the date of any scheduled repairs or servicing.

The EPA Regional Administrator would also be able to approve extensions of the storage for reuse period and impose additional requirements as terms of its approval.

7.6 Module 7C: PCBs OR PCB ITEMS SUBJECT TO 40 CFR 761.65

To ensure that you are in the correct module, the box below provides a reminder of the decision paths you should have taken in the Master Flow Chart in Section 7.3 to arrive at Module 7C.

Reminder

PCBs and PCB Items → ≥ 50 ppm → Most Materials → Waste → Module 7C

PCBs and PCB Items → ≥ 50 ppm → Most Materials → Non-waste → Exception → Module 7C

This module describes the regulations for storage at 40 CFR 761.65. These regulations apply to the **storage for disposal** of most material containing PCBs with a concentration of ≥ 50 ppm. Further, the following types of PCBs **stored for use or reuse** are subject to the requirements described in this module:

- Dielectric fluid containing PCBs at concentrations of ≥ 50 ppm, used for servicing transformers [40 CFR 761.30(a)(2)(vi)];
- Dielectric fluid containing PCBs at concentrations of ≥ 50 ppm, used for servicing
 - Electromagnets,
 - Switches, or
 - Voltage regulators [40 CFR 761.30(h)(2)(vi)]; and
- Dielectric fluid containing any concentration of PCBs and used for servicing railroad transformers [40 CFR 761.30(b)(2)(v)].

It is important to remember that the Anti-dilution Rule (Section 2.4.2) applies to all PCBs and PCB Items subject to 40 CFR 761.65.

The TSCA regulations at 40 CFR 761.65 permit the PCBs and PCB Items subject to the requirements described in this module to be stored in any of three types of storage areas:

- A PCB storage facility that meets the storage facility requirements described in Section 7.6.3;
- Adjacent to a PCB storage facility, under limited conditions (see Section 7.6.3); and
- A temporary storage area, provided the conditions described in Section 7.6.4 are met.

DOE Personnel should read all of the sections of this module, which explains the TSCA requirements that apply to PCB materials subject to 40 CFR 761.65. These sections are:

- Section 7.6.1 - Maximum Duration of Storage;
- Section 7.6.2 - Storage Container Specifications;
- Section 7.6.3 - Storage Facility Requirements;
- Section 7.6.4 - Special Provisions for Temporary Storage;
- Section 7.6.5 - Special Requirements for Commercial Storers of PCB Waste;
- Section 7.6.6 - Marking and Recordkeeping;
- Section 7.6.7 - Notification Requirements; and
- Section 7.6.8 - Inspection, Overpacking, and Spill Cleanup Requirements.

This page is intentionally left blank to allow the flow chart on the following page to appear opposite the supplemental information.

MODULE 7C
7.6.1 Maximum Duration of Storage

SUPPLEMENTAL INFORMATION FOR SECTION 7.6.1, MAXIMUM DURATION OF STORAGE

Step 1 **Start** – This section applies to all PCB materials with PCB concentrations of ≥ 50 ppm that are subject to the TSCA regulations at 40 CFR 761.65. For a review of these PCBs and PCB Items, refer to the introduction of this module.

Step 2 All PCBs and PCB Items **stored for disposal** before January 1, 1983, were required to be removed from storage and disposed of before January 1, 1984. After January 1, 1983, the maximum time PCBs or PCB Items subject to 40 CFR 761.65 (including the PCBs **stored for reuse** described in the introduction of this module) can be **stored prior to disposal** is 1 year from the date when they were first placed into storage [40 CFR 761.65(a)]. *The 1-year limit on storage would not apply to PCB Article Containers or PCB Equipment that do not directly contact PCBs if the PCBs or PCB Articles that they contain are removed and disposed of within 1 year.*

The intent of the regulation is to force a phase-out of PCBs by requiring disposal within 1 year of the date the PCBs or PCB Items are removed from service.

Step 3 **Are the PCBs or PCB Items stored for disposal?** For additional information on the maximum duration of storage for PCBs and PCB Items stored for disposal, proceed to Steps 3A through 3C. For additional information on PCBs in storage for reuse that are subject to 40 CFR 761.65, proceed to Steps 3D through 3E.

Step 3A The 1-year limit on storage for disposal begins when the PCBs or PCB Items are declared a waste or are no longer fit for use. *For example, assume that a PCB Transformer is removed from service on May 1 due to a rupture which rendered the equipment useless. Efforts to place the equipment in storage are hampered by circumstances beyond the owner/operator's control, and the transformer is not placed into "storage for disposal" until 25 days later. In this scenario, EPA would interpret May 1 as the beginning date of the 1-year disposal requirement, not May 26th [42 Federal Register 26569].*

For PCB Containers used to store PCBs removed in batches during servicing activities, the beginning date of the 1-year disposal requirement, i.e., the date the 1-year "clock" begins, is the date that the first batch of waste PCBs was added to the container.

Regulatory Issue

The 1-year Storage for Disposal Limit

EPA is considering clarifying its policy regarding the 1-year storage for disposal limit by discussing specific examples of when the 1-year "clock" begins. For

Continued on next page

instance, it is currently EPA policy that the 1-year period begins when a decision is made by the owner to dispose of a PCB Item. Drums used to collect PCBs in batches must be disposed of within 1 year of the day PCB material is first placed into the container for storage for disposal. The 1-year clock for PCB Articles (i.e., for both the PCBs drained from the PCB Article and the drained PCB Article) begins the day the Article is removed from service for disposal.

EPA is considering a provision for the extension of the 1-year storage for disposal limit under certain circumstances where EPA believes an extension would be legitimate (e.g., lack of disposal capacity). EPA would require an approval from the EPA Region for an extension and may impose additional restrictions. EPA is also considering a waiver of the 1-year storage limit for generators of large amounts of PCB waste if the generator prepares a multi-year plan for expedited phase-out and disposal of all authorized PCBs and PCB Items at the facility.

- Step 3B** PCBs and PCB Items stored for disposal must be shipped to a disposal facility within 9 months of the date of their removal from service for disposal. This allows the disposal facility adequate time to obtain the capacity to dispose of the PCBs or PCB Items. *If a disposal facility is not provided 3 months to dispose of the waste and the 1-year limit on storage for disposal expires, it will result in a violation for your facility, not the disposal facility.*
- Step 3C** Temporary storage, i.e., storage for < 30 days, as discussed in Section 7.6.4, "Special Provisions for Temporary Storage," counts toward the 1-year limit on storage prior to disposal.
- Step 3D** The 1-year limit on storage for use or reuse begins when the PCBs are first placed into storage for use or reuse. If the PCBs are not used or reused within 1 year of the date they were placed into storage, they must be disposed of according to the TSCA disposal requirements described in Chapter 9, "Disposal."
- Step 3E** A decision must be made within 9 months of the date the PCBs were placed in storage for use or reuse as to whether or not the PCBs will be in service within the 1-year deadline, because PCB disposal facilities must be allotted 3 months of the 1-year limit to dispose of the PCBs. *If PCBs are shipped to a disposal facility after 9 months and the disposal facility is unable to dispose of the waste within the 1-year deadline, it will result in a violation for your facility, not the disposal facility.*

Note that PCBs and PCB Items may be removed from service and stored with intent to reuse without triggering the 1-year time clock (Module 7B), unless the PCB materials are PCBs subject to 40 CFR 761.65, if stored for reuse. For a list of such PCBs, refer to the introduction to this module.

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MODULE 7C
7.6.2 Storage Container Specifications

SUPPLEMENTAL INFORMATION FOR SECTION 7.6.2, STORAGE CONTAINER SPECIFICATIONS

Step 1 **Start** — Section 7.6.2, "Storage Container Specifications," applies to all PCBs and PCB Items with a PCB concentration of ≥ 50 ppm that are subject to the TSCA regulations at 40 CFR 761.65. For a review of these PCBs and PCB Items, refer to the beginning of Module 7C.

While it is obvious that PCBs (e.g., liquids, contaminated soils) should be stored in a PCB Container, the TSCA regulations do not require that PCB Articles be stored in a PCB Container unless they are leaking. In fact, the TSCA regulations presume that most transformers, Large High-voltage Capacitors, and Large Low-voltage Capacitors will not be stored in containers.

Storage containers that have contained PCBs at concentrations of ≥ 50 ppm may be reused if they are decontaminated in accordance with 40 CFR 761.79(a). See Chapter 9, "Disposal," for details. *If PCB Containers are to be reused for storing PCBs or PCB Items, contact the appropriate EPA Region to determine if decontamination is necessary prior to reuse as a PCB Container.*

Regulatory Issue

Storage Containers

EPA is considering deferring to DOT container requirements for the storage and transportation of PCBs rather than explicitly require the use of certain DOT containers in the TSCA regulations at 40 CFR Part 761. This would eliminate the need to update the TSCA regulations to reflect changes in the DOT container regulations. Deferring to the DOT container specifications would not affect when TSCA requires the use of these containers, however.

Step 2 **Will a non-liquid or liquid PCB material be stored?** The TSCA PCB storage regulations differentiate between containers storing non-liquid PCBs (Step 2A) and containers storing liquid PCBs (Step 2B).

It is not necessary for intact, non-leaking PCB equipment such as PCB Transformers to be stored in a storage container. PCB managers are urged to use their best judgment when deciding whether or not to use a storage container. If a storage container is used, it must meet the specifications described in this section.

Step 2A Unless a larger container is necessary, containers used for the storage of **non-liquid PCBs and PCB Items** must comply with the Department of Transportation (DOT) Shipping Container Specifications of 49 CFR Part:

- 178.80: Specification 5 container (5- to 110-gallon steel drum);

- 178.82: Specification 5B container (5- to 110-gallon steel drum); or
- 178.115: Specification 17C container (5- to 55-gallon steel drum).

Proceed to Step 3.

Step 2B Unless a larger container is necessary, containers used for the storage of liquid PCBs must comply with the Department of Transportation (DOT) Shipping Container Specifications contained in 49 CFR Part:

- 178.80: Specification 5, for container without removable head (5- to 110-gallon steel drum);
- 178.82: Specification 5B, for container without removable head (5- to 110-gallon steel drum);
- 178.102: Specification 6D cylindrical steel overpack (5- to 55-gallon) with
 - Specification 2S polyethylene container [49 CFR 178.35], or
 - Specification 2SL polyethylene container [49 CFR 178.35(a)]; or
- 178.116: Specification 17E container (5- to 55-gallon steel drum).

Proceed to Step 4.

Step 3 **Is a larger container necessary?** Specification 5, 5B, or 17C containers must be used to store non-liquid PCBs and PCB Items unless a larger container is necessary [40 CFR 761.65(c)(6)]. Alternate containers may be used to store non-liquid PCBs and PCB Items requiring a larger container, provided that the containers meet the criteria described in Steps 3B and 3C [40 CFR 761.65(c)(6)].

Step 3A A DOT-specification 5, 5B, or 17C container must be used.

Step 3B Alternate containers used to store non-liquid PCBs and PCB Items must be designed and constructed in a manner that will provide at least as much protection against leaking and environmental exposure as the containers meeting DOT specifications.

Clarification

Alternative Containers for Non-liquid PCBs and PCB Items

For the storage of solids regulated under 40 CFR 761.65(c)(6), EPA has approved the use of SONOCO "0-14, 0-16, 0-20, 0-25, 0-30, 0-45, 0-55, and 0S-55" molded polyethylene drums as alternatives to the DOT-specification 5, 5B, or 17C containers (USEPA 1991). The approval is based on the DOT finding that the containers are in compliance with the Specification for Packaging [49 CFR 178.140] and the classification of PCBs as class 9 or ORM-E materials [49 CFR 173.510].

- Step 3C** Alternate containers used to store non-liquid PCBs and PCB Items must also be of the same or better relative strength and durability as the DOT-specification containers.
- Step 4** **Is a larger container necessary?** Specification 5, 5B, 6D, or 17E containers must be used to store liquid PCBs unless a larger container is necessary [40 CFR 761.65(c)(7)]. Alternate containers may be used to store liquid PCBs requiring a larger container, provided that the containers meet the requirements of 40 CFR 761.65(c)(7), as described in Steps 4B through 4E.
- Step 4A** A DOT-specification 5, 5B, 6D, or 17E container must be used.
- Step 4B** TSCA requires alternate containers used to store liquid PCBs to be designed, constructed, and operated in compliance with the Occupational Safety and Health Standards at 29 CFR 1910.106 (for flammable and combustible liquids) [40 CFR 761.65(c)(7)(i)]. *Please note that PCBs were widely used in electrical equipment because they are fire-resistant. However, incomplete combustion of PCBs can result in the production of polychlorinated dibenzo-p-dioxin (PCDD) which is much more toxic than PCBs. EPA imposes the same restrictions under TSCA for PCBs as those under OSHA for combustible liquids to limit the threat of human and environmental exposure to PCDD.*

Clarification

Alternative Containers for Liquid PCBs

EPA has approved the use of SONOCO non-removable head molded polyethylene drums, designated PR-30, PR-35, PR-55, PR-60, P-15, P-15A, P-20A, and P-55, for storage of PCB liquids as an alternative to the DOT-specification 5, 5B, 6D, or 17E containers (USEPA 1992). The approval is based on the DOT finding that the containers are in compliance with the Specification for Packaging [49 CFR 178.140] and the classification of PCBs as class 9 or ORM-E materials [49 CFR 173.510].

- Step 4C** In addition, before alternate containers are used to store liquid PCBs, TSCA requires a review of the design of the containers to determine the effect on the structural safety of the containers that will result from placing liquids with the specific gravity of PCBs into the containers [29 CFR 1910.106(b)(1)(i)(f) and 40 CFR 761.65 (c)(7)(i)].
- Step 4D** TSCA also requires the preparation and implementation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan, as described in 40 CFR Part 112 (modified to substitute the word "PCB(s)" for "oil(s)"), for the alternate containers [40 CFR 761.65 (c)(7)(ii)].

Clarification

SPCC Plan Requirements

SPCC plans require the following, or approved equivalent:

- Appropriate location, containment, and/or diversionary structures or equipment to
 - Collect spills from the facility and associated material transfer operations, and
 - Prevent PCBs from reaching navigable water, even in the event of a flood;
- Appropriate storage tank and transfer facility design to
 - Minimize or prevent corrosion,
 - Prevent overfilling and accidental spills,
 - Allow for leak detection (even at night), and
 - Provide security against vandalism and accidental discharges from pumps and valves;
- Appropriate operation of the aforementioned equipment,
- Periodic inspection and testing to detect leaks and corrosion and to assure that equipment is functioning properly; and
- Appropriate corrective action to repair leaks and faulty equipment.

The provisions of 40 CFR Part 112 only apply if some fraction of the liquids stored in the container are oils, as defined by Section 311 of the Clean Water Act [40 CFR 761.65 (c)(7)(ii)].

For more details on SPCC plans, refer to 40 CFR Part 112 and Chapter 12, "Spill Reporting and Cleanup."

Step 4E Storers of PCB waste who store liquid PCBs in alternate containers in accordance with 40 CFR 761.65(c)(7) must notify EPA of their PCB waste-handling activities. See Chapter 11, "PCB Waste Activity Notification," for details.

7.6.3 STORAGE FACILITY REQUIREMENTS

This section applies to all PCBs and PCB Items with a PCB concentration of ≥ 50 ppm that are subject to the TSCA regulations at 40 CFR 761.65. For a review of these PCBs and PCB Items, refer to the beginning of Module 7C.

As described at 40 CFR 761.65(b), PCB storage facilities must have the following components:

- An adequate roof and walls to prevent rain water from reaching the stored PCBs and PCB Items, and
- An adequate floor with a minimum 6-inch high continuous curb. The floor and curbing must:
 - Be constructed of continuous, smooth, and impervious materials, such as Portland cement, concrete, or steel, to prevent or minimize penetration of PCBs; and
 - Provide a containment volume equal to the larger of
 - At least two times the internal volume of the largest PCB Article or PCB Container stored therein, or
 - 25% of the total internal volume of all PCB Articles or PCB Containers stored therein.

(If the internal volume is not known, a best estimate may be used.)

The PCB storage facility must not have any drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area [40 CFR 761.65(b)].

The storage facility must not be located at a site that is below the 100-year flood water elevation.

Regulatory Issue

Alternative Storage Facilities

EPA is considering allowing storage of PCB materials in waste management units permitted by RCRA or a state authorized to manage hazardous waste in containers. Storage in a facility permitted under a state equivalent of the TSCA regulations would also be allowed. All other storage requirements for the PCB wastes under TSCA would continue to apply.

Clarification

Storage Adjacent to a PCB Storage Facility

Structurally undamaged PCB Large High-voltage Capacitors and PCB-contaminated Electrical Equipment that have not been drained of free-flowing dielectric fluid may be placed on pallets located adjacent to a PCB storage facility if the storage facility:

- Meets the requirements described in this section, and
- Has immediately available unfilled storage space equal to at least 10% of the volume of capacitors and equipment stored outside the facility.

PCB Items stored on pallets adjacent to a PCB storage facility must be inspected for leaks weekly (see Chapter 5, "Inspecting Equipment") [40 CFR 761.65(c)(2)]. Refer to the Glossary for the TSCA definitions of "PCB Large High-voltage Capacitor" and "PCB-contaminated Electrical Equipment."

Regulatory Issue

EPA is considering deleting the provision at 40 CFR 761.65(c)(2), which allows certain PCB items to be stored on pallets adjacent to a PCB storage facility. Because these items are typically drained prior to disposal and the drained item is not required to be stored in a PCB storage facility, EPA does not believe this provision is needed.

Storage Adjacent to a PCB Storage Facility

The storage facility must be properly marked, even if every PCB item is marked inside the area. Refer to Chapter 6, "Marking," for additional information on the marking requirements for PCB storage facilities.

Storers of PCB waste who operate a PCB storage facility subject to the requirements of 40 CFR 761.65(b), as described in this section, must notify EPA of their PCB waste-handling activities. See Chapter 11, "PCB Waste Activity Notification," for details.

Clarification

Temporary Storage

PCBs and PCB items subject to the TSCA storage regulations at 40 CFR 761.65 may also be stored temporarily (i.e., for up to 30 days) in an area that does not meet these storage facility specifications. Refer to Section 7.6.4 for details.

Clarification

Movable Equipment Used in PCB Storage Facilities

No item of movable equipment that is used for handling PCBs and PCB items in PCB storage facilities and that comes in direct contact with PCBs, which is subject to the

Continued on next page

requirements described in this section, may be removed from the storage facility area unless it has been decontaminated. Movable equipment may be decontaminated by swabbing surfaces that have come into contact with PCBs with a solvent. The solubility of the PCBs in the solvent must be $\geq 5\%$ by weight.

The solvent may be reused for decontamination until it contains PCBs at a concentration of ≥ 50 ppm; then it must be disposed of as described in Chapter 9 [40 CFR 761.79 and 40 CFR 761.65(c)(4)]. The used solvent is considered to have diluted the PCB residues on the equipment; therefore, for the purpose of disposal, the concentration of PCBs in the contaminated solvent is considered to be the same as that of the original concentration of PCB residues on the equipment. In addition, the contaminated solvent may be a hazardous waste subject to RCRA regulation.

A recent court case involved the disposal of solvent used to rinse a concrete basin with a Hypalon™ liner that had contained liquids and sludges with a PCB concentration of 1,874.8 ppm. After the final rinsing of the basin with the solvent, analysis of the PCB concentration in the solvent indicated that it contained < 50 ppm. Despite the provision that the solvent may be reused until it contains a PCB concentration of ≥ 50 ppm, the court ruled that when the solvent is disposed of, it must be assumed to contain a PCB concentration equal to the PCB concentration in the basin before it was flushed with the solvent (i.e., 1,874.8 ppm) (Rollins v. EPA, 1991).

Precautionary measures must be taken to ensure that decontamination meets applicable safety and health regulations as well (see Chapter 14, "Other Regulatory Requirements").

7.6.4 SPECIAL PROVISIONS FOR TEMPORARY STORAGE

Under certain conditions, the following PCBs and PCB Items may be stored temporarily (i.e., for up to 30 days from the date of their removal from service) in areas that do not meet the storage facility specifications described in Section 7.6.3 [40 CFR 761.65 (c)(1)]:

- Non-leaking PCB Articles and PCB Equipment [40 CFR 761.65 (c)(i)];
- Leaking PCB Articles and PCB Equipment [40 CFR 761.65 (c)(ii)], provided
 - The PCB Items are placed in a non-leaking PCB Container, and
 - The PCB Container contains sufficient sorbent material to absorb any liquid PCBs remaining in the PCB Items;

- PCB Containers containing non-liquid PCBs (e.g., contaminated soil, rags, and debris) [40 CFR 761.65 (c)(i)(iii)]; and
- PCB Containers containing liquid PCBs at a concentration of ≥ 50 ppm but < 500 ppm [40 CFR 761.65 (c)(i)(iv)], provided:
 - A Spill Prevention, Control, and Countermeasure (SPCC) Plan has been prepared for the temporary storage area in accordance with 40 CFR Part 112, and
 - Each PCB Container is marked with a notation that states that the PCB concentration of liquids in the container does not exceed 500 ppm.

See page 7-30 of this chapter and Chapter 12, "Spill Reporting and Cleanup," for guidance on SPCC plans.

A notation must be attached to each PCB Item in temporary storage described above, indicating the date the item was removed from service. See Chapter 6, "Marking," for additional requirements for marking PCB Items.

Regulatory Issue

Temporary Storage of PCB Liquid at a Concentration of ≥ 500 ppm

EPA is considering amending the temporary storage provision at 40 CFR 761.65 (c)(1) to allow temporary storage of PCB liquid at a concentration of ≥ 500 ppm. Temporary storage of such PCB liquids would be limited to 30 days. In addition, the waste would be required to be in an approved DOT container and an SPCC Plan would be required.

7.6.5 SPECIAL REQUIREMENTS FOR COMMERCIAL STORERS OF PCB WASTE

DOE facilities that receive PCB waste only from other DOE facilities are not considered to be commercial storers (neither are DOE contractors, who are considered to be part of DOE) (USDOE 1990).

However, if a DOE facility stores > 500 liquid gallons of PCBs at any time and stores PCB waste generated by a source other than DOE, including other Federal facilities, it is considered a commercial storage facility (USDOE 1990). *PCB waste generated by a DOE contractor as a result of activities that are not under DOE auspices should not be stored with DOE PCB waste, because storage of this waste at a DOE facility would be considered commercial storage.* Under these circumstances, the DOE facility must, in addition to complying with all other applicable requirements described in this module, meet the following special requirements for commercial PCB storage:

- The facility must secure EPA approval of commercial storage, and
- It must develop and submit a closure plan.

However, the Federal government is exempt from closure cost estimates and financial assurance requirements [40 CFR 761.65(j)]. For more details, see the DOE Information Brief, "PCB Manifesting, Tracking, and Disposal Requirement" (USDOE 1990).

Regulatory Issue

Commercial Storers of PCB Waste

EPA is considering amending the definition of a commercial storer of PCB waste to clarify the exclusions for storage of small quantities of PCBs. Currently, facilities that store ≥ 500 liquid gallons of PCBs at any one time are subject to all the requirements that apply to commercial storers. EPA is considering adding a limit of 70 cubic feet of non-liquid PCBs (e.g., soils, cleanup debris) stored at any one time to qualify for the small-quantity exclusion. This exclusion would not apply to PCB items.

The detailed coverage of storage regulations for commercial PCB storage facilities is beyond the scope of this manual. Commercial storage facility operators should consult 40 CFR 761.65(d), (e), and (h) for applicable approval and closure plan requirements.

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MODULE 7C
7.6.6 Marking and Recordkeeping

SUPPLEMENTAL INFORMATION FOR SECTION 7.6.6, MARKING AND RECORDKEEPING

- Step 1** **Start** -- This section applies to all PCB materials with PCB concentrations of ≥ 50 ppm that are subject to the TSCA regulations at 40 CFR 761.65, which regulate storage for disposal. For a review of these PCBs and PCB Items, refer to the beginning of Module 7C.
- Step 2** Any PCB storage facility or temporary PCB storage area subject to 40 CFR 761.65(b) or (c)(1), as discussed in Section 7.6.3 and 7.6.4, must be marked according to the marking requirements described in Chapter 6, "Marking" [40 CFR 761.65(c)(3)]. *Note that the storage area itself must be marked, even if every item inside the area is marked.*
- Step 3** All PCB Items (including containers storing PCBs) must be clearly marked with the date when they were placed in storage. For details on marking requirements, see Chapter 6.
- Step 4** PCB storage must be managed so that the PCB Items can be located by the date they first entered storage [40 CFR 761.65(c)(8)]. *For PCB Containers storing liquid PCB wastes added in batches, this date is the date that the first batch of PCBs was added to the container. For most PCBs and PCB Items, this should be the date that the material was removed from service or the date that a determination was made that the material was unfit for use or reuse.*
- TSCA does not specify how storage must be managed except to require that PCBs and PCB Items can be located by date.*
- Step 5** **Is the PCB material to be stored a non-liquid or a liquid?** If the PCB material is a non-liquid, proceed to Step 5A; otherwise go to Step 6.
- Step 5A** If a non-liquid, the owners or operators of storage facilities must establish and maintain records as provided in 40 CFR 761.180. Recordkeeping requirements are described in Chapter 10.
- Step 6** Is the storage container larger than a DOT specification 5, 5B, 6D, or 17E container (as described in Step 3 in Section 7.6.2)? If the liquid PCBs are stored in a DOE specification 5, 5B, 6D, or 17E container, proceed to Step 6A; if an alternative container is used that is bigger than the DOT-specification containers, go to Step 6B.
- Step 6A** The owners or operators of storage facilities must establish and maintain records as provided at 40 CFR 761.180 [40 CFR 761.65(c)(9)]. Recordkeeping requirements are described in Chapter 10, "Recordkeeping and Reporting."
- Step 6B** Records must be kept for PCB Containers that are larger than the DOT specification (i.e., alternative storage containers, see Section 7.6.2) and that store liquid PCBs [40 CFR 761.65 (c)(8)]. For each batch of PCBs added to the container, the records must include:
- The quantity of the batch and the date the batch was added to the container; and

- The date, quantity, and disposition of any batch of PCBs removed from the container.

In addition, the owners or operators of storage facilities must establish and maintain records as provided in 40 CFR 761.180 [40 CFR 761.65(c)(9)]. Recordkeeping requirements are described in Chapter 10, "Recordkeeping and Reporting."

7.6.7 NOTIFICATION REQUIREMENTS

If PCB storage facilities subject to 40 CFR 761.65(b), as described in Section 7.6.3, or alternative containers for liquid PCBs in accordance with 40 CFR 761.65(c)(7), as described in Section 7.6.2, are used to store **waste PCBs or waste PCB Items**, the storer of the PCB waste must notify EPA of this PCB waste activity (i.e., storage). Upon receiving notification, EPA will assign the storer a unique EPA identification number.

Temporary PCB storage (see Section 7.6.4), which is in areas that do not meet the PCB storage facility specifications described in Section 7.6.3, does not require EPA notification.

For more information on notification requirements and instructions for how to notify EPA, read Chapter 11, "PCB Waste Activity Notification."

MODULE 7C
7.6.8 Inspection, Overpacking, and Spill Cleanup Requirements

SUPPLEMENTAL INFORMATION FOR SECTION 7.6.8, INSPECTION, OVERPACKING, AND SPILL CLEANUP REQUIREMENTS

Step 1 **Start** — This section is applicable to all PCB materials with a PCB concentration of ≥ 50 ppm in storage that are subject to the TSCA regulations at 40 CFR 761.65. For a review of these PCBs and PCB Items, refer to the beginning of Module 7C.

Step 2 **Are PCBs or PCB Items stored on pallets adjacent to a PCB storage facility that meets the requirements of 40 CFR 761.65(b)?** The following PCB Items may be stored on pallets outside PCB storage facilities under the conditions described in Section 7.6.3 [40 CFR 761.65(c)(2)]:

- Structurally undamaged PCB Large High-voltage Capacitors, and
- PCB-contaminated Electrical Equipment stored outside that has not been drained of free-flowing dielectric fluid.

If PCBs or PCB Items are stored in a PCB storage facility or are in a temporary storage area, proceed to Step 2A. If PCBs or PCB Items are stored on pallets adjacent to a PCB storage facility, go to Step 2B.

Step 2A PCBs and PCB Items stored in a PCB storage facility or in a temporary storage area must be checked for leaks at least once every 30 days. *It is not necessary to inspect PCB Articles in PCB Article Containers or PCB Equipment such as fluorescent light ballasts or microwave ovens; it is sufficient to inspect the PCB Article Container or PCB Equipment itself.*

Step 2B PCB Items stored outside a PCB storage facility in accordance with the provisions at 40 CFR 761.65(c)(2) (as described in Section 7.6.3) must be checked for leaks weekly. *It is not necessary to inspect PCB Articles in PCB Article Containers or PCB Equipment such as fluorescent light ballasts or microwave ovens; it is sufficient to inspect the PCB Article Container or PCB Equipment itself.*

Step 3 **Has a leak been discovered as a result of a visual inspection?** If a PCB Item is found to be leaking, the procedures in steps 3B through 3E must be followed; otherwise, proceed to Step 3A.

Step 3A Continue to inspect stored PCB Articles and PCB Containers at least once every 30 days or weekly, as required.

Step 3B Any leaking PCB Articles and PCB Containers and their contents must be transferred immediately to properly marked, non-leaking containers.

Step 3C Any spilled or leaked materials must be cleaned up immediately using sorbents or other adequate means.

Step 3D The PCB-contaminated materials and residues must be disposed of in accordance with 40 CFR 761.60(a)(4).

See Chapter 12 for additional details on spill cleanup procedures and reporting and Chapters 8 and 9 for further information on transportation and disposal.

Step 3E Any movable equipment that comes into direct contact with PCBs and is used for handling PCBs or PCB Items in a PCB storage facility must be decontaminated in accordance with the procedures at 40 CFR 761.79 before it may be removed from the PCB storage facility area [40 CFR 761.65(c)(4)]. Read Section 7.6.3 for details.

7.7 REFERENCES

Rollins v. EPA. 1991. U.S. Court of Appeals for the District of Columbia Circuit. Rollins Environmental Services (NJ) Inc. v. U.S. Environmental Protection Agency. Case No. 90-1508. Petition for Review of a Final Decision of the Environmental Protection Agency. July 5, 1991.

USDOE. 1990. U.S. Department of Energy. Office of Environmental Guidance. TSCA information brief: PCB manifesting, tracking, and disposal requirements. Washington, DC: Department of Energy. EH-231-001.

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USEPA. 1986. U.S. Environmental Protection Agency. Office of Pesticides and Toxic Substances Policy Letter. September 9, 1986.

USEPA. 1991. U.S. Environmental Protection Agency. Office of Pesticides and Toxic Substances. Letter to Mr. Mario E. Gigliotti, P.E., MEG Consulting, Melbourne, FL. March 19, 1991.

USEPA. 1992. U.S. Environmental Protection Agency. Office of Pesticides and Toxic Substances. Letter to Mr. Mario E. Gigliotti, P.E., MEG Consulting, Melbourne, FL. February 12, 1992.

7.8 CHECKLIST FOR CHAPTER 7 -- STORAGE

The following checklist allows PCB managers to determine how well they are complying with TSCA PCB regulations. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of non-compliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Have all PCB storage areas been inspected to ensure that storage could not pose a risk to food or animal feed?	_____	_____	_____
General	Are leaking PCB Items or PCB Containers transferred immediately to a non-leaking PCB Container and overpacked or contained by EPA approved methods?	_____	_____	_____
General	If any more stringent state regulations exist, do storage activities comply with these requirements?	_____	_____	_____
General	Are reasonable precautions being taken to prevent PCBs in storage from contaminating the environment, considering potential future land use and CERCLA action levels?	_____	_____	_____
General	Does storage comply with all applicable regulations, if PCBs are mixed with RCRA hazardous waste or PCBs are contaminated with radioactive material?	_____	_____	_____

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Module		1 Yes	2 No	3 N/A
A	TSCA PCB regulations do not regulate the storage of certain PCB materials. Have non-regulated materials been correctly identified?	_____	_____	_____
A	Have other (non-TSCA) requirements been met that may apply?	_____	_____	_____
B	Have the regulations that apply to storage for use and reuse in other chapters of this guidance been identified?	_____	_____	_____
C	Are all PCB Items and PCB Containers marked with the date they were placed in storage?	_____	_____	_____
C	Do storage containers for PCBs and PCB Items meet DOT specifications or, for containers larger than these specifications, do they meet the TSCA alternative requirements?	_____	_____	_____
C	Are PCB Articles and PCB Containers in storage for disposal checked for leaks at least once every 30 days, or where required, every week?	_____	_____	_____
C	Have any leaks been found in a PCB Article or PCB Container?	_____	_____	_____
	Have the contents been transferred to a properly marked, non-leaking container?	_____	_____	_____
	Have the spilled or leaked PCBs been cleaned up?	_____	_____	_____

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Module		1 Yes	2 No	3 N/A
	Have PCB-contaminated materials and residues properly been disposed of?	_____	_____	_____
C	Are PCB and PCB Item storage areas properly marked?	_____	_____	_____
C	Do storage facilities meet the TSCA requirements for adequate roof, walls, and containment?	_____	_____	_____
C	Has EPA been notified of your PCB waste-handling activities?	_____	_____	_____
C	Have PCB Items and PCB Containers (containing the items) placed into temporary storage been properly marked with the date the item was removed from service?	_____	_____	_____

For applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 8

TRANSPORT OF PCBs AND PCB ITEMS

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8.1 INTRODUCTION

This chapter covers regulations applicable to the transport of PCBs and PCB Items. Under certain circumstances, TSCA requires a manifest to accompany shipments of PCBs and PCB Items. The TSCA requirements for transportation of PCBs and PCB Items can be found at 40 CFR 761.207 and 40 CFR 761.208.

This chapter does not cover in detail any Department of Transportation (DOT) regulations that may apply.

DOE Personnel should refer to this guidance before transporting PCB materials by DOE vehicles or offering such materials for transport by a vehicle owned by another person.

8.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

8.2.1 DEFINITIONS

Many of the terms used in this chapter are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Commerce,
- Commercial storer of PCB waste,
- Designated facility,
- Disposer of PCB waste,
- Generator of PCB waste,
- Manifest,
- PCB waste, and
- Transporter of PCB waste.

When confronted with an unfamiliar term, consult the Glossary.

8.2.2 MANIFESTING REQUIREMENT

TSCA requires the generator of PCB waste to prepare a manifest when the waste is first introduced into commerce in a manner that will cause the waste to leave the generator's control. This usually occurs when the generator turns its PCB waste over to a transporter for delivery to a commercial off-site storage or disposal facility. This also occurs when the

PCB waste is placed on the generator's own transport vehicle for shipment to a commercial off-site storage or disposal facility [54 *Federal Register* 52716].

A manifest need not accompany the shipment of PCB waste via transport vehicle to a storage or disposal facility owned or operated by a generator of the waste because the generator has not yet relinquished control over the PCB waste. This exception applies to both transport via the generator's vehicles and transport by an independent transporter, since, in the latter case, the transporter is presumed to be acting pursuant to the generator's instructions [54 *Federal Register* 52716]. *This exception to the manifest requirement applies to shipments of PCB waste generated by a DOE facility that are sent via transport vehicle to a DOE storage or disposal facility (e.g., Oak Ridge). It does not apply, however, to shipments transported to a facility not owned or operated by DOE, that is, to a commercial storage or disposal facility. These shipments must be accompanied by a manifest.*

8.2.3 THE EFFECT OF THE ANTI-DILUTION RULE ON MANIFESTING

PCB waste and non-waste materials that contain PCBs at concentrations of < 50 ppm, where the PCB concentration of < 50 ppm is the result of dilution, must be managed as if they contained PCB concentrations of ≥ 50 ppm [40 CFR 761.1(b)]. An example of such a PCB waste is spill cleanup material containing PCBs at concentrations of < 50 ppm when the spill involved material containing PCBs at a concentration of ≥ 50 ppm [40 CFR 761.207(j)].

8.2.4 MANIFEST FORMS

TSCA requires generators of PCB waste to prepare a Uniform Hazardous Waste Manifest (EPA Form 8700-22) and, if necessary, the continuation sheet (EPA Form 8700-22A) before introducing their waste into commerce in a manner that will cause loss of control over the waste by generator. The manifest is a multi-copy tracking document that identifies the chain of custody of the waste from generator to disposal facility.

Clarification

Information Required on the Manifest

The Uniform Manifest requires the following information:

- Manifest document number, the generator's 12-digit identification number plus a 5-digit suffix unique to the waste shipment;
- Generator name, address, and telephone number;
- Transporter company name and EPA ID number (transporter #1 is the initial transporter);
- The designated facility's name, site address, and EPA ID number (this is the off-site commercial storage or disposal facility which the generator has designated to receive its PCB waste);
- Container number and type;
- U.S. DOT description including proper shipping name, hazardous class, and ID number;
- Special handling instructions and additional information such as emergency response telephone numbers;
- Date of removal from service for disposal;
- Generator certification (see Glossary definition of "certification");
- Acknowledgement of acceptance by the transporter; and
- Acknowledgement of acceptance by the designated facility.

The manifest also contains space for a description of any discrepancies. In addition, the manifest should contain any information required by relevant states.

Continued on next page

Any PCB or PCB Item that is not subject to TSCA disposal provisions (see Chapter 9, "Disposal") is not required to comply with the TSCA manifest requirements. Examples of exempted items include drained PCB-contaminated carcasses for salvage, decontaminated PCB Containers, and PCB Small Capacitors. Additional information regarding Uniform Manifest requirements can be found at 54 *Federal Register* 52728.

Many states require the use of their manifest, which includes the Federal requirements and supplemental state requirements. TSCA has established the following decision hierarchy for determining which manifest to use when shipping PCB waste [40 CFR 761.207(c)-(f)]:

- If the state to which the shipment is sent (i.e., the consignment state) supplies the manifest and requires its use, the generator must use the consignment state's manifest.
- If the consignment state does not supply the manifest, but the state in which the generator is located (i.e., generator state) supplies the manifest and requires its use, the generator must use that state's manifest.
- If both the consignment state and generator state supply manifests and require their use, the generator must use the consignment state's manifest.
- If neither the consignment state nor the generator state supplies the manifest, the generator may obtain the manifest from any source.

8.2.5 USE OF THE MANIFEST

When a manifest is used, a generator of PCB waste must comply with the following:

- Designate on the manifest one TSCA-approved, off-site commercial storage or disposal facility for the PCBs and PCB Items described on the manifest [40 CFR 761.207(g)];
- Prepare an adequate number of copies of the manifest so as to provide the generator, the initial transporter, each subsequent transporter, and the owner or operator of the designated storage or disposal facility with one legible copy for their records, and one additional copy to be returned to the generator by the owner or operator of the first designated storage or disposal facility [40 CFR 761.207(i)];
- Sign the manifest certification;

- Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and
- Retain one copy of the manifest among its records in accordance with 40 CFR 761.209(a) and give to the transporter the remaining copies of the manifest that will accompany the shipment of PCB waste [40 CFR 761.208(a)(1)(iv)].

If a commercial broker is used to dispose of the PCB waste, be sure to ask for a copy of the manifest the broker prepares for the commingled waste shipment containing DOE waste.

Clarification

DOT Shipping Names

The following is a list of some examples of proper DOT shipping names for PCBs transported with a manifest or shipping paper from the DOT Hazardous Materials Table [49 CFR 172.101]:

- RQ, Environmentally hazardous substance, solid, N.O.S., 9, UN3077, Packing group III (PGIII);
- RQ, Environmentally hazardous substance, liquid, N.O.S., 9, UN3082, Packing group III (PGIII); and
- RQ, Polychlorinated biphenyls, 9, UN2315, Packing group II (PGII).

The Reportable Quantity (RQ) for PCBs is 1 pound. For more information about DOT shipping names refer to 49 CFR Part 172.

8.2.6 OTHER ISSUES TO CONSIDER

What happens if the transporter is unable to deliver the PCB waste to the designated storage or disposal facility? If the transporter is unable to deliver the entire quantity of the PCB waste to the designated storage or disposal facility, TSCA requires the transporter to contact the generator of the PCB waste for further instructions. The generator must either designate another TSCA-approved storer or disposer, or instruct the transporter to

return the PCB waste to the generator [40 CFR 761.207(h)]. The transporter must, in either case, revise the manifest to reflect the generator's instructions [40 CFR 761.208(b)(8)].

What actions are to be taken by generators of PCB waste if they fail to receive a hand-signed manifest from the designated storer or disposal facility? If you use an independent transporter to transport the PCB waste to a commercial storer or disposer, you must confirm by telephone (or by other means of confirmation agreed to by both parties, that the commercial storer or disposer actually received the manifested waste. You must confirm receipt of the waste by close of business the day after you receive the manifest hand-signed by the commercial storer or disposer.

If you do not receive the hand-signed manifest within 35 days after the independent transporter accepted the PCB waste, you must telephone (or communicate by some other agreed upon means) the commercial storer or disposer to determine whether the PCB waste has actually been received. If the waste has not been received, you must contact the independent transporter to determine the disposition of the PCB waste.

If you have not received the hand-signed manifest from an EPA-approved facility within 10 days after you have contacted the independent transporter, you must submit an exception report to your EPA Regional Administrator. You must retain a written record of all telephone or other confirmations to be included in your annual document log [40 CFR 761.208(a)(4)] (see Chapter 10, "Recordkeeping and Reporting").

8.2.7 LABORATORIES AND SAMPLES

A laboratory sample is exempt from the manifesting requirements described in 40 CFR 761.208 when the sample is being [40 CFR 761.65(i)(2)]:

- Transported to a laboratory for the purpose of testing,
- Transported back to the sample collector after testing,
- Stored by the sample collector before transport to a laboratory for testing,
- Stored in a laboratory before testing,
- Stored in a laboratory after testing but before it is returned to the sample collector, or
- Stored temporarily in the laboratory after testing for a specific purpose (for example, until conclusion of a court case or enforcement action where further testing of the sample may be necessary).

- Stored temporarily in the laboratory after testing for a specific purpose (for example, until conclusion of a court case or enforcement action where further testing of the sample may be necessary).

For a sample collector shipping samples to a laboratory or a laboratory returning samples to a sample collector to be exempt from the manifesting requirements, they must [40 CFR 761.65(i)(3)]:

- Comply with applicable U.S. Department of Transportation or U.S. Postal Service shipping requirements, found in 49 CFR 173.345 and U.S. Postal Regulations 652.2 and 652.3, respectively.
- Assure that the following information accompanies the sample:
 - The sample collector's name, mailing address, and telephone number,
 - The laboratory's name, mailing address, and telephone number,
 - The quantity of the sample,
 - The date of shipment, and
 - A description of the sample.
- Package the sample so that it does not leak, spill, or vaporize from its packaging.

When the concentration of the PCBs in the sample has been determined, and the sample's use is terminated, the sample must be considered PCB waste and properly disposed. A laboratory must either [40 CFR 761.65(i)(4)]:

- Manifest the PCB waste to a disposer or commercial storer, as required in 40 CFR 761.208, retaining a copy of each manifest, as required in 40 CFR 761.209, and comply with the exception reporting requirements as required in 40 CFR 761.215(a) and (b); or
- Return the sample to the sample collector (who must then properly dispose of the sample) according to the shipping requirements for laboratories and samples set forth in this section.

Regulatory Issue

Treatability Studies

EPA has indicated that it intends to clarify its position that PCB-contaminated media that is used to validate PCB disposal methods is not exempt from the manifest requirements under the laboratory sample exemption at 40 CFR 761.65(i). The laboratory sample exemption applies only to PCB samples sent to a laboratory to determine the PCB concentration. EPA believes that treatability study samples are small-scale disposal experiments. EPA is considering the addition of a use authorization at 40 CFR 761.30 for treatability study samples and a class exemption for processing and distribution in commerce of these samples. In addition, EPA is considering defining "treatability study" at 40 CFR 761.3 consistent with the RCRA definition at 40 CFR 260.10.

8.2.8 CERTIFICATE OF DISPOSAL

For each shipment of manifested PCB waste that the owner or operator of a disposal facility accepts by signing the manifest, the owner or operator must prepare a Certificate of Disposal for the PCBs and PCB Items disposed of at the facility, which must include:

- The identity of the disposal facility, by name, address, and EPA identification number;
- The identity of the PCB waste affected by the Certificate of Disposal, including a reference to the manifest number for the shipment;
- A statement certifying the fact of disposal of the identified PCB waste, including the date(s) of disposal, and identifying the disposal process used; and
- A certification as defined in 40 CFR 761.3 [40 CFR 761.218(a)] (see Glossary).

The Certificate of Disposal must be sent to the generator of the PCB waste identified on the manifest that accompanied the PCB waste within 30 days of the date that the disposal of the PCB waste identified on the manifest was completed [40 CFR 761.218(b)].

If a commercial broker was used, a certificate of disposal for the commingled waste shipment should be obtained.

8.2.9 DEPARTMENT OF TRANSPORTATION REQUIREMENTS

TSCA PCB regulations do not affect or limit the applicability of any requirements applicable to transporters of PCBs (either waste or non-waste) under regulations issued by the Department of Transportation (DOT)[40 CFR 761.208(b)(9)]. *This is an important point because in certain situations (for example, the transport of PCB materials that are not PCB waste or the shipment of PCB DOE-generated waste to a DOE-owned or operated storage or disposal facility), shipping papers meeting DOT requirements must accompany the shipment, while an EPA manifest need not.*

DOT has established requirements for hazardous material classification, packaging, marking, labeling, placarding transport vehicles, shipping papers, and incident reporting rules that may apply to transport of PCBs. These requirements are contained in Title 49 of the Code of Federal Regulations. Pertinent sections to consult include:

- Part 171: General information, regulations, and definitions;
- Part 172: Hazardous materials tables and hazardous materials communications regulations;
- Part 173: Shippers--general requirements for shipments and packagings;
- Part 174: Carriage by rail;
- Part 175: Carriage by aircraft;
- Part 176: Carriage by vessel;
- Part 177: Carriage by public highway;
- Part 178: Shipping container specifications; and
- Part 179: Specifications for tankcars.

Clarification

HM181 Summary

In an effort to enhance safety and promote flexibility in packaging, DOT revised the Hazardous Materials Regulations [49 CFR Parts 171-180]. Previous to the revision, 49 CFR Part 178 contained specific packaging requirements for containers and receptacles used in the transport of PCBs and other classified hazardous materials. The revised rule known as DOT Hazardous Material 181, or HM181, phases out those detailed design specifications and institutes new standards based on performance criteria. Additional information concerning performance-oriented packaging specifications can be found at 55 *Federal Register* 52402, December 21, 1990.

All containers used for the transportation of PCBs and PCB Items must meet DOT requirements identified at 49 CFR Part 178. These containers include several alternative containers approved by EPA (i.e., SONOCO's "0-14, 0-16, 0-20, 0-25, 0-30, 0-45, 0-55, and 0S-55 molded polyethylene drums for PCB solids and SONOCO's "PR-30, PR-35, PR-55, PR-60, P-15, P-15A, P-20A, and P-55 non-removable head, molded polyethylene drums for liquid PCBs). Containers used to store PCBs and PCB Items may be used as transport containers provided they meet DOT specifications.

8.2.10 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environment (EH-20) for instructions on how to proceed. EH-20 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

8.2.11 STATE REGULATIONS

The state in which the DOE facility is located may have additional regulations that apply to the manifesting and transport of PCB waste. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

The EPA's Office of Toxic Substances conducted a telephone survey of the PCB programs and activities of all fifty states, the District of Columbia, Puerto Rico, and the Virgin Islands in September and October 1990. The results of this survey are compiled in a report, "Summary of State PCB Management Programs," available at no cost from the TSCA Hotline (202-554-1404). Appendix A of this guidance manual contains a table summarizing a portion of the state requirements discussed in the survey report.

8.2.12 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

This chapter covers the TSCA requirements applicable to the transport of PCBs and PCB Items. PCBs and PCB Items mixed with, contained in, or contaminated with RCRA hazardous waste are subject to:

- Applicable PCB manifesting requirements, as defined in Modules C and D; and
- Applicable RCRA hazardous waste manifesting and transport regulations, as defined in 40 CFR Parts 262, 263, 264, and 265. *Remember that off-site shipments of RCRA hazardous waste will always require a manifest, even if a manifest is not required under TSCA.*

As you use the modules in this chapter, keep in mind you must comply with both the TSCA and RCRA requirements. Where TSCA and RCRA conflict, the TSCA regulations provide that the more stringent requirement applies [40 CFR 761.1(e)]. It is important to note that the RCRA regulations apply regardless of the concentrations of the PCBs. Thus, PCBs and PCB Items containing PCBs at concentrations of <50 ppm may not be subject to TSCA, but may be subject to RCRA requirements.

8.2.13 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

8.3 MASTER FLOW CHART: TRANSPORT OF PCBs AND PCB ITEMS

The flow chart and the supplemental information on the following pages will help you identify the TSCA requirements that apply to the transport of PCB materials.

MASTER FLOW CHART: TRANSPORT OF PCBs AND PCB ITEMS
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: TRANSPORT OF PCBs AND PCB ITEMS

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers the manifesting and transport requirements for PCBs and PCB Items.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 8.2, "General Requirements and Considerations," which contains information about the requirements that could apply to the transport of any PCBs and PCB Items.

Step 2 **Is the PCB material subject to 40 CFR 761 Subpart D?** The Master Flow Chart in Chapter 7, "Storage," provides detailed instructions for determining whether a PCB material is subject to the storage requirements of 40 CFR 761 Subpart D. Those materials are subject to Subpart D must also comply with more stringent transport and manifesting requirements than those that are not. Below is a summary of the materials subject to 40 CFR 761 Subpart D:

Not Subject to Subpart D

All PCB materials < 50 ppm

Most non-waste materials $\geq$ 50 ppm

Exempted wastes $\geq$ 50 ppm

- non-leaking PCB Small Capacitors
- Hydraulic machines:
 - Drained of PCB $\geq$ 50 ppm
 - Flushed of PCBs $\geq$ 1000 ppm
- Drained PCB-contaminated Electrical Equipment (<500 ppm)

Subject to Subpart D

Most PCB wastes $\geq$ 50 ppm

Non-waste exceptions $\geq$ 50 ppm

- Dielectric fluid used for servicing:
 - Transformers
 - Electromagnets
 - Switches
 - Voltage regulators

- Railroad transformers
- Dielectric fluid used to service or repair mining equipment

If your PCB materials are not subject to 40 CFR 761 Subpart D, proceed to Module 8A.

Those materials subject to Subpart D must comply with the transport and manifesting regulations described in Modules 8B, 8C, or 8D. Proceed to Step 3 to determine which applies to your PCB material.

Note: If the concentration of PCB materials is < 50 ppm as the result of dilution, then whether or not it is subject to Subpart D depends on the original PCB concentration of the material. Refer to Section 2.4.2, "The Anti-dilution Rule," for details.

Step 3 **Will the PCB Material be transported to a DOE-owned or operated facility?** The TSCA manifesting regulations differentiate between PCB shipments transported to facilities owned or operated by the enduser of PCBs and PCB Items and those that are not. If the answer to this question is yes, proceed to Module 8B; otherwise, proceed to Step 4.

Step 4 **Will you use an independent transporter?** To determine the appropriate manifesting requirements, it is necessary to identify if DOE or an independent transporter will transport the PCB materials. If DOE will be the transporter, proceed to Module 8C for the manifest requirements. If an independent transporter will be utilized, proceed to Module 8D for the manifest requirements.

8.4 MODULE 8A: TRANSPORT OF MATERIALS THAT ARE NOT SUBJECT TO SUBPART D

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 8.3 to arrive at Module 8A.

Reminder

PCBs or PCB Items → Not Subject to Subpart D → Module A

The Federal TSCA regulations (40 CFR Part 761) do not require that a manifest accompany a shipment of most PCB materials that are not subject to Subpart D. *For the most part, materials subject to 40 CFR 761 Subpart D are wastes. Shipments of PCBs and PCB Items that are still in use (e.g., the transport of a PCB Transformer to a commercial firm for servicing) would not require a TSCA manifest.*

Similarly, a shipment of drums containing PCBs at a concentration of < 50 ppm would not need to be manifested (unless required by the facility's permit) when transported to a disposal facility.

Clarification

DOT Regulations

In the above situations, a shipping paper meeting the DOT requirements described in Subpart C of 49 CFR Part 172 may still need to accompany the shipment. Other DOT requirements may also apply (see Section 8.2.9 of this guidance).

8.5 MODULE 8B: TRANSPORT OF PCB WASTE TO DOE FACILITIES

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 8.3 to arrive at Module 8B.

Reminder

PCBs or PCB Items → PCB waste → DOE facility → Module B

The Federal TSCA regulations (40 CFR Part 761) **do not** require the use of a manifest when the PCB waste is transported to a storage or disposal facility owned or operated by the generator of the PCB waste [40 CFR 761.208(b)(1)(ii)]. *This exception applies to shipments of PCB waste generated by a DOE facility that are transported to another DOE-owned or operated facility, regardless of whether the waste is transported by a DOE vehicle or by an independent transporter.*

Clarification

A Note on DOT Regulations

In the above situation, a shipping paper meeting the DOT requirements described in Subpart C of 49 CFR Part 172 may still need to accompany the shipment. Other DOT requirements may also apply (see Section 8.2.9 of this guidance).

8.6 MODULE 8C: TRANSPORT OF PCB WASTE TO NON-DOE FACILITIES WHEN DOE IS BOTH THE GENERATOR AND TRANSPORTER

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 8.3 to arrive at Module 8C.

Reminder

PCBs or PCB Items → PCB waste → Non-DOE facility → DOE transported →
Module C

This module describes the TSCA manifest requirements applicable to shipments of PCB waste generated by DOE and transported by a DOE-owned vehicle to a non-DOE facility (e.g., a commercial storer or disposer). These requirements are in addition to those identified in the instructions to EPA Form 8700-22 (or the state equivalent).

It should be noted that special manifesting requirements apply for transport of PCB waste by water or rail. Because water and rail shipments by DOE are not expected to occur at most facilities, the details of these requirements are not included in this guidance. Generators who plan to use these modes of transport can find the applicable requirements at 40 CFR 761.208(a)(2) and (3). Transporter requirements for these modes of transport are discussed at 40 CFR 761.208(b)(5) and (6).

MODULE 8C
8.6 Transport of PCB Waste to Non-DOE Facilities
When DOE is Both Generator and Transporter

SUPPLEMENTAL INFORMATION FOR SECTION 8.6, TRANSPORT OF PCB WASTE TO NON-DOE FACILITIES WHEN DOE IS BOTH THE GENERATOR AND THE TRANSPORTER

- Step 1** **Start** – This module describes the TSCA manifest requirements that apply when DOE-generated PCB waste is transported to non-DOE facilities using a DOE-owned vehicle.
- Step 2** **Will the PCB waste be shipped in bulk?** If the answer is yes, the generator must specify in Item 11 on the manifest the information described in Step 2A, and the transporter must comply with the requirements described in Step 2B (USEPA 1991). If the answer is no, proceed to Step 3.
- Step 2A** For each bulk load of PCBs, indicate the identity of the PCB waste, the earliest date of removal from service for disposal, and the weight (in kilograms) of the PCB waste [40 CFR 761.207(a)(1)].
- Step 2B** The transporter (i.e., the driver) is required to comply with the following:
- Before transporting the PCB waste, sign and date the manifest, acknowledging acceptance of the waste from the generator, and return a signed copy to the generator before leaving the generator's facility [40 CFR 761.208(b)(2)];
 - Ensure that the manifest accompanies the PCB waste shipment [40 CFR 761.208(b)(3)]; and
 - When delivering the PCB waste to another transporter, or to the designated storer or disposer, obtain the date of delivery and the handwritten signature of the subsequent transporter, or the owner or operator of the designated storage or disposal facility on the manifest; retain one copy of the manifest in accordance with 40 CFR 761.209(b); and give the remaining copies of the manifest to the accepting transporter, or the designated storage or disposal facility [40 CFR 761.208(b)(4)].
- Step 3** **Will the PCB waste be shipped in a PCB Article Container or a PCB Container?** If the answer is yes, the generator must specify in Item 11 on the manifest the information described in Step 3A, and the transporter must comply with the requirements described in Step 3B (USEPA 1991). If the answer is no (i.e., PCB Articles and PCB Equipment will be shipped without a container), the generator and transporter must comply with the requirements in Steps 3C and 3D, respectively.
- Step 3A** For each PCB Article Container or PCB Container, the generator must indicate its unique identifying number, the type of PCB waste (e.g., soil, debris, small capacitor) it contains, the earliest date of removal from service for disposal, and the weight (in kilograms) of the PCB waste contained [40 CFR 761.207(a)(2)].

Step 3B The transporter (i.e., the driver) is required to comply with the following:

- Before transporting the PCB waste, sign and date the manifest, acknowledging acceptance of the waste from the generator, and return a signed copy to the generator before leaving the generator's facility [40 CFR 761.208(b)(2)];
- Ensure that the manifest accompanies the PCB waste shipment [40 CFR 761.208(b)(3)]; and
- When delivering the PCB waste to another transporter, or to the designated storer or disposer, obtain the date of delivery and the handwritten signature of the subsequent transporter, or the owner or operator of the designated storage or disposal facility on the manifest; retain one copy of the manifest in accordance with 40 CFR 761.209(b); and give the remaining copies of the manifest to the accepting transporter, or the designated storage or disposal facility [40 CFR 761.208(b)(4)].

Step 3C For each PCB Article or piece of PCB Equipment not in a PCB Container or PCB Article Container, indicate in Item 11 on the manifest the serial number (if available) or other identification if there is no serial number, the date of removal from service for disposal, and the weight (in kilograms) of the PCB waste in each PCB Article or piece of PCB Equipment [40 CFR 761.207(a)(3)] (USEPA 1991).

Step 3D The transporter (i.e., the driver) is required to comply with the following:

- Before transporting the PCB waste, sign and date the manifest, acknowledging acceptance of the waste from the generator, and return a signed copy to the generator before leaving the generator's facility [40 CFR 761.208(b)(2)];
- Ensure that the manifest accompanies the PCB waste shipment [40 CFR 761.208(b)(3)]; and
- When delivering the PCB waste to another transporter, or to the designated storer or disposer, obtain the date of delivery and the handwritten signature of the subsequent transporter, or the owner or operator of the designated storage or disposal facility on the manifest; retain one copy of the manifest in accordance with 40 CFR 761.209(b); and give the remaining copies of the manifest to the accepting transporter, or the designated storage or disposal facility [40 CFR 761.208(b)(4)].

8.7 MODULE 8D: TRANSPORT OF PCB WASTE TO NON-DOE FACILITIES USING AN INDEPENDENT TRANSPORTER

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 8.3 to arrive at Module 8D.

Reminder

PCBs or PCB Items → PCB waste → Non-DOE facility → Independent transporter → Module D

This module describes the TSCA manifest requirements applicable to shipments of PCB waste generated by DOE and transported by an independent transporter (e.g., a common carrier) to a non-DOE facility (e.g., a commercial storer or disposer). These requirements are in addition to those identified in the instructions that accompany EPA Form 8700-22 (or the state equivalent).

MODULE 8D
8.7 Transport of PCB Waste to Non-DOE Facilities
Using an Independent Transporter

SUPPLEMENTAL INFORMATION TO SECTION 8.7, TRANSPORT OF PCB WASTE TO NON-DOE FACILITIES USING AN INDEPENDENT TRANSPORTER

- Step 1** **Start** — This module describes the TSCA manifest requirements that apply when DOE-generated PCB waste is transported to non-DOE facilities using an independent transporter.
- Step 2** **Is the PCB waste to be shipped in bulk?** If the answer is yes, the generator must specify in Item 11 on the manifest the information described in Step 2A (USEPA 1991). If the answer is no, proceed to Step 3.
- Step 2A** For each bulk load of PCBs, indicate the identity of the PCB waste, the earliest date of removal from service for disposal, and the weight (in kilograms) of the PCB waste [40 CFR 761.207(a)(1)].
- Step 3** **Will the PCB waste be shipped in a PCB Article Container or a PCB Container?** If the answer is yes, the generator must specify in Item 11 on the manifest the information described in Step 3A (USEPA 1991). If the answer is no, comply with the requirements in Step 3B.
- Step 3A** For each PCB Article Container or PCB Container, the generator must indicate in Item 11 on the manifest its unique identifying number, the type of PCB waste (e.g., soil, debris, small capacitor) it contains, the earliest date of removal from service for disposal, and the weight (in kilograms) of the PCB waste contained [40 CFR 761.207(a)(2)] (USEPA 1991).
- Step 3B** For each PCB Article or piece of PCB Equipment not in a PCB Container or PCB Article Container, indicate in Item 11 on the manifest the serial number if available, or other identification if there is no serial number, the date of removal from service for disposal and the weight (in kilograms) of the PCB waste in each PCB Article [40 CFR 761.207(a)(3)] (USEPA 1991).

Caution

Before the transporter leaves your facility, be sure to obtain a copy of the manifest signed and dated by the transporter.

8.8 REFERENCES

USEPA. 1991. U.S. Environmental Protection Agency. Telephone discussion between Mr. Thomas Simons, Operations Branch, Chemical Management Division, Office of Pollution Prevention and Toxics and Energetics, Inc., Columbia MD. November 13, 1991.

8.9 CHECKLIST FOR CHAPTER 8 -- TRANSPORT OF PCBs AND PCB ITEMS

The following checklist allows PCB managers to determine how well they are complying with TSCA PCB requirements covering the transport of PCBs. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of non-compliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Is the correct manifest (i.e., the consignment state's, generator state's, or alternative source) being used for shipments of PCB waste transported to a facility not owned or operated by DOE?	_____	_____	_____
General	Are you complying with the general requirements for manifests (i.e., designating one commercial storer or disposer, signing the manifest, obtaining the transporter's signature and acceptance date, retaining one copy and providing sufficient copies for subsequent handlers of the waste)?	_____	_____	_____
General	Prior to transporting PCBs or PCB Items, have you checked each container or item for the PCB mark, a unique identification number, proper container type, and container integrity (i.e., leaks)?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
General	In case the transporter is unable to deliver your PCB waste to the designated storage or disposal facility, do you provide the transporter with an alternative storage or disposal facility, or instructions to return the PCB waste to you?	_____	_____	_____
General	When using an independent transporter, do you contact the designated storage or disposal facility within 24 hours of receiving the manifest from the storer or disposer to confirm its authenticity?	_____	_____	_____
General	If you do not receive the hand-signed manifest within 35 days after the independent transporter accepts your PCB waste, are you communicating with the storage or disposal facility to determine whether or not the waste has been received?	_____	_____	_____
General	If the waste has not been received within 35 days, do you contact the independent transporter to determine its disposition?	_____	_____	_____
General	If you have not received the hand-signed manifest from the storage or disposal facility within 10 days after you have contacted the independent transporter, do you submit an exception report to your EPA Regional Administrator?	_____	_____	_____
General	Do transport activities comply with all applicable regulations, including those not directly related to PCBs (e.g., RCRA, AEA, DOT, etc.)?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
C, D	For each bulk shipment of PCB waste, does the manifest indicate the identity of the PCB waste, the earliest date of removal from service for disposal, and the weight in kilograms of the PCB waste?	_____	_____	_____
C, D	For each PCB Article Container or PCB Container shipped, does the manifest state the item's unique identifying number, contents (e.g., soil, debris, small capacitor), it contains, the earliest date of removal from service for disposal and the weight in kilograms of the PCB waste contained?	_____	_____	_____
C, D	For each PCB Article or piece of PCB Equipment that is not in a container, does the manifest indicate its identification number (e.g., serial number), the date of removal from service for disposal, and the weight in kilograms of the PCB waste it contains?	_____	_____	_____
C	When a DOE vehicle is used to transport DOE-generated PCB waste, does the vehicle driver:			
	• Sign and date the manifest and return a copy to the generator before leaving the facility?	_____	_____	_____
	• Carry the remaining copies of the manifest with the shipment?	_____	_____	_____

continued on next page

Module			
	1 Yes	2 No	3 N/A
• Obtain the date of delivery and signature of the subsequent transporter, or owner or operator of the storage or disposal facility when delivering the waste to another transporter or storage or disposal facility?			
• Retain one copy of the manifest and give the remaining copies to the accepting transporter, or the designated storage or disposal facility?			

For all applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 9

DISPOSAL

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9.1 INTRODUCTION

This chapter covers Federal regulations applicable to the disposal of PCBs and PCB Items. The TSCA regulations that apply to the disposal of PCBs and PCB Items are found at 40 CFR 761.60. Please note that the disposal facility specifications at 40 CFR 761.70 (Incinerators) and 40 CFR 761.75 (Chemical waste landfills) are beyond the scope of this manual; however, they have been cited, where appropriate, in the text of this chapter for reference purposes.

DOE Personnel should refer to this guidance before disposing of PCB materials.

9.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

9.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Chemical waste landfill,
- Disposal,
- Disposer of PCB waste,
- Fluorescent light ballast,
- Generator of PCB waste,
- Incinerator,
- Laboratory,
- Leak,
- Municipal solid wastes,
- Qualified incinerator,
- Small quantities for research and development, and
- Waste oil.

When confronted with an unfamiliar term, consult the Glossary.

9.2.2 PROHIBITED DISPOSAL ACTIVITY

TSCA prohibits the processing of liquid PCBs into non-liquid forms to circumvent the high-temperature incineration disposal requirements of 40 CFR 761.60(a) [40 CFR 761.60(a)(4)], unless the liquids are PCBs with PCB concentrations of < 500 ppm and are disposed of in a chemical waste landfill pursuant to 40 CFR 761.75(b)(8)(ii).

9.2.3 POTENTIAL CERCLA LIABILITY

Often, the PCB disposal regulations allow the PCB manager to choose a disposal method. In some cases, TSCA may not regulate disposal at all (e.g., disposal of non-leaking Small PCB Capacitors). However, PCB managers should consider potential CERCLA liability when choosing a disposal option.

9.2.4 PCB SPILL CLEANUP MATERIALS

Under TSCA, spills and other uncontrolled discharges of PCBs at concentrations of ≥ 50 ppm constitute the disposal of PCBs [40 CFR 761.135(a)]. PCBs resulting from the cleanup and removal of spills, leaks, or other uncontrolled discharges must be disposed of in accordance with the requirements described in Modules A through C of this chapter. For details on storage requirements for spill cleanup materials, see Chapter 7, "Storage." For details on spill reporting and cleanup, see Chapter 12 "Spill Reporting and Cleanup."

Any materials contaminated with PCBs as the result of a spill or leak of PCBs, or the result of decontamination procedures for PCB Containers or movable equipment used in TSCA storage facilities, must be disposed of as if they contained the PCB concentration of the original material [40 CFR 761.1(b)].

9.2.5 ALTERNATIVE METHODS OF DISPOSAL

An alternative method of destroying PCBs may be used in lieu of any requirement to incinerate PCBs, as stated in 40 CFR 761.60, with the approval of the appropriate EPA Regional Administrator or the Director of the EPA Exposure Evaluation Division if:

- The alternative method can be demonstrated to achieve a level of performance equivalent to:
 - A TSCA incinerator described at 40 CFR 761.70,

- A high-efficiency boiler described at 40 CFR 761.60(a)(2)(iv) (mineral oil dielectric fluids), or
- A high-efficiency boiler described at 40 CFR 761.60(a)(3)(iv) (other PCB liquids);
- A written request is sent to the EPA Regional Administrator or the Director of the EPA Exposure Evaluation Division for an exemption from the disposal requirements of 40 CFR 761.60 or 40 CFR 761.70; and
- The alternative method of destroying PCBs will not present an unreasonable risk of injury to health or the environment.

Approval for the use of the alternative method may be granted at the discretion of EPA and may contain such conditions and provisions as EPA deems appropriate. For more detail on how to request approval for an alternative disposal method, see 40 CFR 761.60(e).

In some cases, physical separation of PCBs from liquids and solids may be performed as an alternative to disposal. EPA has issued a policy statement on this issue, available from the TSCA Hotline (202-554-1404), titled "Distillation, Solvent Extraction, Filtration, and Other Physical Separation Methods for PCBs," TSCA Compliance Program Policy No. 6-PCB-2 (USEPA 1983).

Regulatory Issue

Large-volume Wastes

"Large volume" is a term that generally describes wastes that are generated or managed in greater volumes than when they were originally placed in service (e.g., dredged materials, contaminated media, municipal sewage treatment sludges, industrial sludges, and large volumes of materials such as PCB gaskets that are not authorized for use). Large-volume wastes are frequently heterogeneous in nature and contaminated with low levels of PCBs that pose little risk to human health or the environment. "Large-volume" excludes PCB Articles and other PCB Items and PCB liquids (e.g., dielectric fluids or solvents used in decontamination) coming out of service.

Continued on next page

To promote disposal flexibility for these wastes, EPA made a draft guidance document ("Interim Guidance on Non-Liquid PCB Disposal Methods to be Used as Alternatives to a 40 CFR 761.75 Chemical Waste Landfill") available when it published the Advanced Notice of Proposed Rulemaking (ANPRM) on June 10, 1992 [56 *Federal Register* 26745]. This guidance describes alternative methods of PCB disposal that are particularly applicable to large-volume wastes, including:

- Thermal destruction such as infrared thermal treatment or circulating bed combustion,
- Physical separation such as thermal treatment and solvent extraction,
- Solidification or stabilization such as encapsulation,
- In-situ vitrification,
- Biological treatment, and
- Chemical dechlorination.

These methods have been acknowledged by EPA to have been used with varying degrees of success. DOE facilities may submit applications to use these (or other) disposal methods to the Regional Administrator pursuant to 40 CFR 761.60(e), and they will be considered on a case-by-case basis. EPA acknowledged concerns that the requirement to obtain a disposal permit for these options would be an impediment to the use of these alternative technologies, but EPA expects that as these technologies become more widely used, the permitting process will become streamlined. EPA is also considering proposing regulations to allow disposal on a risk basis.

For large-volume PCB wastes that are not generated as a result of remedial activities (e.g., wastes derived from metal recovery shredding operations, demolition wastes, and large volumes of insulation or gaskets), EPA is considering allowing disposal in municipal solid waste landfills, subject to certain restrictions. Disposal in sensitive areas such as wellhead protection areas and residential settings would likely be prohibited.

9.2.6 CHOOSING A DISPOSAL FACILITY

When sending waste off-site for disposal at a commercial disposal facility, you should investigate the facility to ensure that it is properly permitted and in compliance with the

TSCA regulations. You should also ensure that the facility has all required Federal and state permits (including state transportation permits, if applicable), proof of financial assurance, and other pertinent insurance (e.g., pollution liability insurance). Disposers of PCB materials often provide a package of this information upon request.

If the facility uses an alternative method for destroying PCBs, the facility should also provide evidence that EPA approval has been obtained.

9.2.7 STORAGE OF PCB WASTE PRIOR TO DISPOSAL

For details on TSCA requirements for the storage of PCB waste materials, see Chapter 7, "Storage."

9.2.8 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environment (EH-20) for instructions on how to proceed. EH-20 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the nuclear criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

9.2.9 STATE REGULATIONS

The state in which a disposal facility is located may have additional regulations that apply to the disposal of PCB waste. State regulations are not covered in this guidance document. Users should determine if there are any State requirements that apply.

EPA's Office of Toxic Substances conducted a telephone survey of the PCB programs and activities of all fifty states, the District of Columbia, Puerto Rico, and the Virgin Islands in September and October 1990. The results of this survey are compiled in a report, "Summary of State PCB Management Programs," available at no cost from the TSCA Hotline (202-554-1404). Appendix A of this guidance manual contains a table summarizing a portion of the state requirements discussed in the survey report.

9.2.10 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

The modules of this chapter describe the TSCA requirements for disposing of PCBs and PCB Items. In cases where PCBs or PCB Items are mixed with, contained in, or contaminated with RCRA hazardous waste (for examples, see Section 2.5), disposal may also be subject to the RCRA land disposal restrictions described at 40 CFR Part 268. Key concepts of the land disposal program as it applies to PCBs are included here because it is often an area that causes confusion.

PCBs are one of the California List wastes addressed by the RCRA land disposal restrictions. This subgroup of wastes includes:

- Liquid hazardous waste containing PCBs at concentrations of ≥ 50 ppm (California List PCBs) [40 CFR 268.32(a)(2)], and
- Liquid and non-liquid hazardous waste containing Halogenated Organic Compounds (HOCs) at total concentrations of $\geq 1,000$ ppm (California List HOCs) [40 CFR 268.32(a)(3), (e)(1) and (e)(2)]. PCBs are among the HOCs that must be included in the determination of whether hazardous waste contains HOCs at concentrations that trigger the California List land disposal prohibition (i.e., $\geq 1,000$ ppm). A complete list of the HOCs is contained in Appendix III of 40 CFR Part 268.

For California List wastes, EPA has established treatment standards that must be complied with when disposing of such waste. As described in 40 CFR 268.42(a)(1), liquid RCRA hazardous (listed or characteristic) wastes containing PCBs at concentrations of ≥ 500 ppm must be incinerated in a facility meeting the requirements of 40 CFR 761.70. Liquid hazardous wastes containing PCBs at concentrations of ≥ 50 ppm but < 500 ppm must be incinerated in accordance with 40 CFR 761.70 or burned in a high-efficiency boiler

meeting the requirements of 40 CFR 761.60. *Note that these requirements are the TSCA requirements for such waste, i.e., the TSCA disposal requirements have been integrated into the RCRA land disposal framework, thus ensuring that the most stringent requirement of either TSCA and RCRA applies. Also note that these requirements only apply to liquid hazardous waste. To determine whether or not the waste is a liquid, Method 9095 (Paint Filter Liquids Test) must be used. The test is contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846 (U.S. EPA 1986a).*

Incineration in accordance with the RCRA requirements for incinerators at Subpart O of the 40 CFR Part 264 is required for [40 CFR 268.42(a)(2)]:

- Liquid hazardous wastes containing PCBs at concentrations of < 50 ppm and HOCs in total concentrations of $\geq 1,000$ ppm (where PCBs are one of the HOCs), and
- All non-liquid hazardous wastes containing HOCs in total concentrations of $\geq 1,000$ ppm (where PCBs are one of the HOCs).

9.2.11 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE WASTE

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

Currently, DOE's Oak Ridge Reservation operates the only TSCA incinerator permitted to accept radioactively contaminated wastes for disposal.

9.3 MASTER FLOW CHART: DISPOSAL

The flow chart and the supplemental information on the following pages will help you identify the TSCA requirements that apply to the disposal of PCB materials.

MASTER FLOW CHART: DISPOSAL
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: DISPOSAL

Start Before you start this flow chart, you should have answered the five preliminary questions in Chapter 2:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers the disposal of waste PCBs and waste PCB Items.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 9.2, "General Requirements and Considerations," which contains information about the requirements that could apply to disposal of any PCBs and PCB Items.

Step 2 **Has the material had direct contact with or been contaminated by PCBs?** If the answer to this question is no (i.e., the material is a PCB Article Container or PCB Equipment), proceed to Module D. If the material has had contact with or been contaminated by PCBs, proceed to Step 3.

Clarification

Fluorescent Light Ballasts and Other Small Appliances Containing PCB Small Capacitors

Fluorescent light ballasts and other small appliances containing PCB Small Capacitors (e.g., microwave ovens) are generally excluded from TSCA disposal requirements. Users of this manual should consult Module 9D, "Disposal Requirements for PCB Items that Do Not Contact PCBs" for the applicable requirements. Note that leaking PCB Small Capacitors are considered to have been in direct contact with PCBs. For disposal requirements applicable to leaking PCB Small Capacitors, proceed to Step 3.

Step 3 **What is the PCB concentration?** The TSCA disposal regulations differentiate between PCBs and PCB Items containing PCBs at concentrations of ≥ 50 ppm and PCBs and PCB Items containing PCBs at concentrations of < 50 ppm. Any material that has been diluted is considered to have the original concentration of PCBs for the purposes of the disposal regulations [40 CFR 761.1(b)]. If the PCB concentration is < 50 ppm, proceed to Module 9A; if it is ≥ 50 ppm, go to Step 4.

- Step 4** **What type of PCB material requires disposal?** TSCA disposal requirements for PCB Articles are discussed in Module 9E; TSCA disposal requirements for PCB Containers are discussed in Module 9F. For information on the disposal of liquid and non-liquid PCBs, proceed to Step 5.
- Step 5** **Are the PCBs liquids with a PCB concentration ≥ 500 ppm?** PCB liquids at a PCB concentration of ≥ 500 ppm are expected to constitute the majority of PCB waste and are discussed in Module 9B. The disposal requirements applicable to other liquid PCBs and all non-liquid PCBs at PCB concentrations of ≥ 50 ppm, are described in Module 9C. These requirements apply to:
- Mineral oil dielectric fluid from PCB-contaminated Electrical Equipment containing a PCB concentration of ≥ 50 ppm but < 500 ppm [40 CFR 761.60(a)(2)];
 - Liquids, other than mineral oil dielectric fluid, containing a PCB concentration of ≥ 50 ppm but < 500 ppm [40 CFR 761.60(a)(3)];
 - Any non-liquid PCBs at concentrations of ≥ 50 ppm in the form of contaminated soil, rags, or other debris [40 CFR 761.60(a)(4)]; and
 - All dredged materials and municipal sewage treatment sludges that contain PCBs at concentrations of ≥ 50 ppm [40 CFR 761.60(a)(5)].

9.4 MODULE 9A: DISPOSAL REQUIREMENTS FOR MOST PCB MATERIALS AT PCB CONCENTRATIONS OF < 50 PPM

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 9.3 to arrive at Module 9A.

Reminder

Waste PCB Materials → Direct contact/Contains PCBs → < 50 ppm PCBs
→ Module 9A

The Federal TSCA regulations (40 CFR Part 761) do not regulate the disposal of PCBs or PCB Items at PCB concentrations of < 50 ppm unless they have reached that concentration by dilution. *If the PCB concentration is the result of dilution, it is regulated as if it had the original PCB concentration. See Section 2.4.2 for details.*

*When removed from service, PCBs or PCB Items containing PCBs at concentrations of < 50 ppm that have been in authorized use are not regulated for disposal (i.e., they do not have to be disposed of in a chemical waste landfill or incinerated); however, they must be disposed of in a responsible manner. Disposal may occur in a municipal landfill. However, you should consider more protective disposal to avoid potential CERCLA liability (see Section 9.2.3). Many municipal landfills are now CERCLA (Superfund) sites. DOE waste management managers should send wastes to secure facilities that meet minimum national standards. In addition, several states ban the disposal of used oil in municipal solid waste landfills [57 Federal Register 21528]. These PCBs and/or PCB Items may not be put back into commerce or disposed of by "using" the PCBs in any of the ways prohibited under 40 CFR 761.20(d). **Prohibited** uses of PCBs include, but are not limited to [40 CFR 761.20(d)]:*

- Road oiling,
- General dust control,
- As a pesticide or herbicide carrier, and
- As a rust preventative on pipes.

The use of waste oil containing any detectable concentration (i.e., ≥ 2 ppm) of PCBs as a sealant, coating, or dust control agent is **prohibited** [40 CFR 761.20(d)].

It is also important to note that burning of waste oil containing any quantifiable level of PCBs (i.e., ≥ 2 ppm) for energy recovery is subject to TSCA requirements [40 CFR 761.20(e)]. Refer to Chapter 13, "Burning of Used Oil for Energy Recovery," for the TSCA and RCRA requirements.

9.5 MODULE 9B: DISPOSAL REQUIREMENTS FOR LIQUID PCBs AT PCB CONCENTRATIONS OF ≥ 500 PPM

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 9.3 to arrive at Module 9B.

Reminder

Waste PCB Materials $\rightarrow$ Direct contact/Contains PCBs $\rightarrow \geq 50$ ppm $\rightarrow$ PCBs $\rightarrow$ Liquid PCBs ≥ 500 ppm $\rightarrow$ Module 9B

All liquid PCBs containing PCBs at concentrations of ≥ 500 ppm must be disposed of in an incinerator that complies with 40 CFR 761.70 [40 CFR 761.60(a)(1)]. An alternative method of destruction may be used upon approval by EPA. The alternative method must be able to achieve a level of performance equivalent to an incinerator described at 40 CFR 761.70. See Section 9.2.5 for details.

Caution

Liquid PCBs containing PCBs at concentrations of ≥ 500 ppm must not be processed into non-liquid forms to circumvent the high-temperature incineration requirements of 40 CFR 761.60(a) [40 CFR 761.60(a)(4)].

9.6 MODULE 9C: DISPOSAL REQUIREMENTS FOR OTHER PCBs AT PCB CONCENTRATIONS OF ≥ 50 PPM

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 9.3 to arrive at Module 9C.

Reminder

Waste PCB Materials $\rightarrow$ Direct contact/Contains PCBs $\rightarrow \geq 50$ ppm $\rightarrow$ PCBs $\rightarrow$ Other PCBs ≥ 50 ppm $\rightarrow$ Module 9C

This module discusses the TSCA requirements for disposal of the following types of PCBs at concentrations of ≥ 50 ppm:

- Liquid PCBs, including mineral oil dielectric fluid, containing a PCB concentration of ≥ 50 ppm but < 500 ppm (i.e., 50 to 499 ppm);
- Any non-liquid PCBs at concentrations of ≥ 50 ppm in the form of contaminated soil, rags, or other debris; and
- All dredged materials, slurries, and sludges that contain PCBs at concentrations of ≥ 50 ppm.

In addition to the disposal methods discussed in each sub-section of this module, PCBs may be disposed of using an EPA-approved alternative disposal method. Refer to Section 9.2.5 for details.

Read the appropriate sub-section of this module to determine the disposal requirements that apply:

- 9.6.1 Liquid PCBs with PCB concentrations of < 500 ppm;
- 9.6.2 Non-liquid PCBs with PCB concentrations of ≥ 50 ppm; and
- 9.6.3 Dredged Materials, Slurries, and Sludges.

9.6.1 LIQUID PCBs WITH PCB CONCENTRATIONS OF < 500 PPM

Liquid PCBs, including mineral oil dielectric fluid from PCB-contaminated Electrical Equipment, containing PCB concentrations of ≥ 50 ppm but < 500 ppm, must be disposed of by one of the following [40 CFR 761.60(a)(2) and (a)(3)] methods:

- In an incinerator that complies with the facility specifications at 40 CFR 761.70; or
- In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75, but only if information is provided to the owner or operator of the chemical waste landfill that shows that the liquid PCBs or mineral oil dielectric fluid does not exceed 500 ppm PCBs and is not an ignitable waste; or
- In a high efficiency-boiler that meets the specifications of either 40 CFR 761.60(a)(3)(iii) (for PCB liquids) or 40 CFR 761.60(a)(2)(iii) (for mineral oil dielectric fluids); or
- In a facility using an alternative disposal method that has been approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).

Clarification

Liquid Ignitable Wastes

Liquid ignitable wastes are wastes that have a flash point $< 60^{\circ}\text{C}$ (140°F), as determined by the following method or an equivalent method [40 CFR 761.75(b)(8)(iii)]:

- A Pensky-Martens Closed Cup Tester, using the protocol specified in ASTM Standard Method D-93-79 or D-93-80, or the Setaflash Closed Tester using the protocol specified in ASTM Standard D-3278-78.

Clarification

Disposal of Liquids in a Chemical Waste Landfill

In general, liquid PCBs must not be processed into non-liquid forms to circumvent the high temperature incineration requirements of 40 CFR 761.60(a) [40 CFR 761.60(a)(4)]. However, bulk liquids with PCB concentrations of < 500 ppm may be disposed of in a chemical waste landfill, provided that prior to such disposal:

- The waste is pre-treated or stabilized (e.g., chemically fixed, evaporated, mixed with dry inert absorbent) to reduce its liquid content or increase its solid content so that a non-flowing consistency is achieved, and
- The presence of free liquids is eliminated [40 CFR 761.75(b)(8)(ii)].

9.6.2 NON-LIQUID PCBs WITH PCB CONCENTRATIONS OF ≥ 50 PPM

Any non-liquid PCBs at concentrations of ≥ 50 ppm in the form of contaminated soil, rags, or other debris must be disposed of [40 CFR 761.60(a)(4)]:

- In an incinerator that complies with the facility specifications at 40 CFR 761.70, or
- In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75, or
- In a facility using an alternative disposal method that has been approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).

This provision is intended to permit large volumes of soil and debris (e.g., trash, trees, lumber, and other rubbish that may be involved in a spill cleanup operation or in removal or excavation of materials from old disposal sites) to be disposed of in a chemical waste landfill (USEPA 1985).

9.6.3 DREDGED MATERIALS, SLURRIES, AND SLUDGES

■ Dredged Material and Municipal Sewage Treatment Sludges

The disposal of dredged material and municipal sewage treatment sludges is addressed separately from the disposal of other PCB wastes under TSCA. Industrial slurries and sludges are not addressed by the regulations at 40 CFR Part 761; however, EPA has issued two policy statements on the disposal of industrial slurries and sludges.

All dredged materials and municipal sewage treatment sludges that contain PCBs at concentrations of ≥ 50 ppm must be disposed of [40 CFR 761.60(a)(5)]:

- In an incinerator that complies with the facility specifications at 40 CFR 761.70; or
- In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75; or
- Using an alternative disposal method approved by EPA, as described at 40 CFR 761.60(a)(5)(iii) and 761.60(f)(2).

Clarification

Alternative Disposal Method for Dredged Materials and Sludges

If an alternative method of disposal is required to dispose of dredged materials or municipal sewage treatment sludges with a PCB concentration of ≥ 50 ppm, the disposal method must be approved by the EPA Region in which the PCBs are located. Applications for disposal in a manner other than destruction in a TSCA incinerator or disposal in a chemical waste landfill must be made in writing to the appropriate EPA Regional Administrator. The application must contain:

- Information that indicates, based on technical, environmental, and economic considerations, that:
 - Disposal in an incinerator or chemical waste landfill is not reasonable and appropriate, and

Continued on next page

-- The alternative disposal method will provide adequate protection to health and the environment; and

- Any other information that the EPA Regional Administrator believes to be necessary for evaluation of the alternative disposal method.

Approval by the EPA Regional Administrator must be in writing. When approving an alternative disposal method, the EPA Regional Administrator is required to consider other applicable EPA guidelines, criteria, and regulations to ensure that the discharges of dredged materials and municipal sewage treatment sludges are adequately controlled to protect the environment. The approval may contain any limitations on the alternative method that the EPA Regional Administrator considers appropriate [40 CFR 761.60(a)(5)(iii)].

If an approved alternative disposal method for PCB-contaminated dredged materials and municipal sewage treatment sludges is to be used, the disposer must:

- Comply with all limitations contained in the EPA approval [40 CFR 761.60(a)(5)(iii)], and
- Give written notice to the state and local governments within whose jurisdiction the disposal is to take place, at least 30 days prior to conducting the approved disposal activities [40 CFR 761.60(f)(2)].

■ Industrial Sludges and Slurries

The TSCA regulations at 40 CFR 761.60 do not specifically address the disposal of industrial sludges and slurries (e.g., process wastes, tank sludges, lagoon sludges, and similar materials) contaminated with PCBs at a concentration ≥ 50 ppm.

EPA has issued two policy statements to clarify its position on the disposal of industrial sludges and slurries. These policy statements, listed below, may be obtained at no cost from the TSCA Hotline (202-554-1404):

- November 28, 1989. "Determination Regarding the Scope of 40 CFR 761.60(a)(4)."
- August 13, 1985. TSCA Compliance Program Policy No. 6-PCB-4, "Disposal Methods for PCBs in Sludge."

The policy statement dated November 28, 1989, clarifies the scope of 40 CFR 761.60(a)(4), which governs disposal of non-liquid PCBs at concentrations of ≥ 50 ppm in the form of contaminated soil, rags, or other debris. EPA interprets "soil, rags, and other debris" to exclude industrial sludges and slurries; therefore, industrial sludges and slurries may not be disposed of as non-liquid PCBs.

The policy statement dated August 13, 1985, also states that the disposal provision for non-liquid PCBs at 40 CFR 761.60(a)(4) does not apply to, among other things, slurries and industrial sludges. In this policy statement, EPA determined that the intent of the regulations at 40 CFR 761.60(a) is that industrial sludges and slurries be disposed of based on their PCB concentration rather than as non-liquid PCBs. *Note that this is essentially the same as EPA's method for regulating the disposal of PCB liquids at 40 CFR 761.60(a)(1) and (a)(3).*

Specifically, industrial sludges or slurries with a PCB concentration of ≥ 50 ppm but < 500 ppm must be disposed of (USEPA 1985):

- In an incinerator that complies with the facility specifications at 40 CFR 761.70, or
- In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75.

It should be noted that disposal is also permitted in a facility using an alternative disposal method, if the alternative method is approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).

An additional option is to process the industrial sludges and slurries to separate the liquid phase from the solid phase. Both liquid and solid phases resulting from separation would then be subject to the disposal requirements for PCBs with a concentration of 50-499 ppm, but they may be disposed of separately (see Figure 9-1).

Industrial sludges or slurries with a PCB concentration of ≥ 500 ppm must be disposed of in an incinerator that complies with the facility specifications at 40 CFR 761.70 (USEPA 1985). Disposal is also permitted in a facility using an alternative disposal method, if the alternative method is approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5). Figure 9-1 illustrates the TSCA requirements for disposal of industrial sludges and slurries.

**Figure 9-1
TSCA DISPOSAL REQUIREMENT FOR
INDUSTRIAL SLUDGES AND SLURRIES***

* Requirements based on: (1) 11/28/89 OPTS Issue Statement, "Determination Regarding the Scope of 40 CFR 761.60(a)(4)"; (2) TSCA Compliance Program Policy #6-PCB-4, "Disposal Methods for PCBs in Sludge," 8/13/85; and (3) TSCA requirements for the disposal of liquid PCB wastes < 500 ppm in a chemical waste landfill [40 CFR 761.75(b)(8)(ii)], assuming that sludges and slurries are mixtures of liquids and solids, which can be determined using the paint filter test.

Incineration at a facility that meets the specifications at 40 CFR 761.70 meets the disposal requirements at 40 CFR 761.60(a) for any type of PCBs; therefore, it is always an acceptable disposal method for industrial sludges and slurries contaminated with PCBs at concentrations ≥ 50 ppm. Because disposal requirements for industrial sludges and slurries are not specifically provided for in 40 CFR 761.60(a), a narrow interpretation of 40 CFR 761.60(a) would prohibit disposal of industrial sludges and slurries in chemical waste landfills. Prior to disposal, you should consult with the appropriate contacts in your EPA Region and the EPA Region(s) where disposal may occur to obtain guidance on the disposal of industrial sludges and slurries with PCB concentrations of 50 to 499 ppm in a chemical waste landfill.

Caution

Processing industrial sludges and slurries into non-liquid PCBs to avoid the high temperature incineration disposal requirement for PCBs with a PCB concentration of ≥ 500 ppm is prohibited (USEPA 1985).

PCB industrial sludges or slurries generated by processing liquid PCBs must be disposed of in the same manner as required for the original liquid PCBs (USEPA 1985). *For example, if a commercial PCB disposal process treats a liquid with a PCB concentration of ≥ 500 ppm and a sludge or slurry with a PCB concentration of < 500 ppm is produced, the sludge or slurry must be disposed of in a TSCA incinerator. For guidance on the disposal of other products of industrial sludge or slurry processing activities, consult the appropriate EPA Region(s).*

Regulatory Issue

Disposal of Large Volume Industrial Sludges

As a matter of policy, EPA has treated industrial sludges similarly to PCB liquids and has required that industrial sludges with a PCB concentration of ≥ 500 ppm be incinerated in a TSCA incinerator. EPA is considering proposing the use of site-specific risk factors to determine appropriate disposal mechanisms for all remediation wastes, which includes industrial sludges.

9.7 MODULE 9D: DISPOSAL REQUIREMENTS FOR PCB ITEMS THAT DO NOT CONTACT PCBs

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 9.3 to arrive at Module 9D.

Reminder

Waste PCB Materials → No direct contact/Not contaminated → Module 9D

TSCA does not regulate the disposal of PCB Items that have not come in contact with PCBs. *Thus, PCB Article Containers and PCB Equipment may be disposed of as municipal solid waste provided that any PCB Article contained within these items is first removed (see Module 9E of this chapter for the disposal requirements for PCB Articles). Before disposing of these items, however, it is advisable to determine if any other Federal or state regulations may apply.*

Clarification

Light Ballasts and Other Small Appliances

In most cases, removal of the PCB Small Capacitor(s) in fluorescent light ballasts and other small appliances (e.g., microwave ovens) prior to disposal is unnecessary, because both the PCB Equipment (e.g., the light ballast) and the PCB Small Capacitor may be disposed of as municipal solid waste. Disposal of the PCB Small Capacitors in light ballasts and other small appliances is only regulated by TSCA if the facility has ever manufactured PCB Small Capacitors or PCB Equipment; EPA has determined that the random disposal of non-leaking PCB Small Capacitors found in fluorescent light ballasts and other small appliances by infrequent disposers does not present an environmental hazard [44 *Federal Register* 31528]. *However, leaking PCB Small Capacitors are fully regulated as PCB waste. See Section 9.8.2 for the disposal requirements that apply to leaking PCB Small Capacitors.*

Continued on next page

You should consider whether disposal of the PCB Equipment in a municipal solid waste landfill presents an environmental hazard or whether it could result in the release of a Reportable Quantity of PCBs under CERCLA. If more protective disposal is desired (e.g., if several light ballasts containing PCB Small Capacitors are to be disposed of at the same time), the PCB Equipment should be disposed of as described in Section 9.8.2. You would have the option of disposing of the PCB Equipment intact or removing the PCB Small Capacitors and disposing of the rest of the light ballast or other PCB Equipment as municipal solid waste. Some EPA Regions and states have developed requirements that prohibit disposal of more than two or three light ballasts in a municipal waste landfill. Recycling the light ballasts should also be considered as an option. There are companies that remove the PCB Capacitor (including the contaminated asphalt potting material) and recycle the remaining uncontaminated metals (copper, steel, and aluminum). Over 80% of the ballast is recoverable.

9.8 MODULE 9E: DISPOSAL REQUIREMENTS FOR PCB ARTICLES

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 9.3 to arrive at Module 9E.

Reminder

Waste PCB Materials → Direct contact/Contains PCBs → ≥ 50 ppm → PCB Articles
→ Module 9E

This module discusses the TSCA requirements for disposal of the following types of PCB Articles containing PCBs at concentrations of ≥ 50 ppm:

- PCB Transformers with a PCB concentration of ≥ 500 ppm;
- PCB Capacitors with a PCB concentration of ≥ 50 ppm;
- PCB-contaminated Electrical Equipment with a PCB concentration of ≥ 50 ppm but < 500 ppm, including PCB-contaminated Transformers;
- Hydraulic machines with a PCB concentration of ≥ 50 ppm; and
- Other PCB Articles (e.g., pumps, pipes, and other manufactured items containing PCBs) with a PCB concentration of ≥ 50 ppm, including PCB Electrical Equipment with a PCB concentration of ≥ 500 ppm.

Caution

Damaged (e.g., leaking) PCB Articles containing PCBs at concentrations of ≥ 50 ppm may not be disposed of in a chemical waste landfill (USEPA 1989).

Read the appropriate sub-section of this module to determine the disposal requirements that apply to the following types of PCB Articles:

- 9.8.1 PCB Transformers (Containing PCBs at concentrations of ≥ 500 ppm),
- 9.8.2 PCB Capacitors (Containing PCBs at concentrations of ≥ 50 ppm),
- 9.8.3 Most PCB-contaminated Electrical Equipment (Containing PCBs at concentrations of 50 to 499 ppm),
- 9.8.4 Hydraulic Machines (Containing PCBs at concentrations of ≥ 50 ppm), and
- 9.8.5 Other PCB Articles (Containing PCBs at concentrations of ≥ 50 ppm).

9.8.1 PCB TRANSFORMERS (CONTAINING PCBs AT CONCENTRATIONS OF ≥ 500 PPM)

PCB Transformers (i.e., transformers containing PCBs at concentrations of ≥ 500 ppm) must be disposed of [40 CFR 761.60(b)(1)]:

- In an incinerator that complies with the facility specifications at 40 CFR 761.70;
- In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75, provided that the transformer is drained of all free-flowing liquid and then filled with solvent, allowed to stand for at least 18 hours, and drained thoroughly; or
- In a facility using an alternative disposal method that has been approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).

PCB Transformer carcasses may not be salvaged for scrap (USEPA 1986a).

Note that Section 9.8.1 applies to PCB Transformers only. Read Section 9.8.3 for the disposal requirements for transformers that contain PCBs at concentrations of 50 to 499 ppm.

Caution

PCB liquids that are removed from the PCB Transformer prior to disposal of the transformer carcass in a chemical waste landfill must be disposed of as described in Module 9B of this chapter. Solvents used to flush the transformer may include kerosene, xylene, toluene, and other solvents in which PCBs are readily soluble.

When you flush a PCB Transformer, it is important to remember two points with regard to the disposal of the resulting PCB-contaminated solvent:

- Because TSCA considers any PCB material that has been diluted to have the original concentration of PCBs [40 CFR 761.1(b)], the concentration of PCBs in the contaminated solvent is considered to be the same as that of the drained PCBs (*Rollins v. EPA*, 1991); and
- The contaminated solvent may also be a hazardous waste subject to RCRA regulation. For example, if a solvent identified at 40 CFR Part 261.31 (i.e., an F-listed solvent) were used to flush the transformer, the resulting PCB-contaminated solvent would be considered a RCRA listed hazardous waste when disposed of. Alternatively, if the solvent used was not listed at 40 CFR Part 261.31, it would be necessary to determine whether the resulting mixture exhibited any of the characteristics of a RCRA hazardous waste (see Section 2.5 for additional details).

If it is determined that the contaminated solvent is also a RCRA hazardous waste, each applicable waste management requirement of both RCRA and TSCA must be complied with. Where they conflict, the more stringent must be applied.

Precautionary measures should be taken so that the solvent flushing procedure is conducted in accordance with applicable safety and health standards, as required by Federal or state regulations (see Chapter 14, "Other Regulatory Requirements").

Regulatory Issue

Disposal of Solvents Used in Decontamination

EPA is considering clarifying the disposal requirements for solvents used to decontaminate PCB Articles. EPA interprets the dilution rule in the existing regulations (i.e., at 40 CFR 761.1(b)) to require solvents that have been in contact with PCBs to be disposed of according to the concentration of the original PCBs in the PCB Article, not according to their actual PCB concentration. Nonetheless, EPA is considering an amendment to the decontamination provisions at 40 CFR 761.79 that would allow hydrocarbon solvents to be disposed of by burning for energy recovery as if it were used oil (see Chapter 13, "Burning of Used Oil for Energy Recovery").

9.8.2 PCB CAPACITORS (CONTAINING PCBs AT CONCENTRATIONS OF $\geq$ 50 PPM)

The flow chart and the supplemental information on the following pages will help you identify the TSCA requirements applicable to the disposal of PCB Capacitors.

MODULE 9E
9.8.2 PCB Capacitors (Containing PCBs at Concentrations of ≥ 50 ppm)

SUPPLEMENTAL INFORMATION FOR SECTION 9.8.2, PCB CAPACITORS (CONTAINING PCBs AT CONCENTRATIONS OF ≥ 50 PPM)

- Step 1** **Start** -- This section describes the disposal requirements for PCB Capacitors containing PCBs at concentrations of ≥ 50 ppm.
- Step 2** **Is the capacitor a non-leaking PCB Small Capacitor?** If it is a non-leaking PCB Small Capacitor, proceed to Step 3. If it is a leaking PCB Small Capacitor, a PCB Large High-voltage Capacitor, or a PCB Large Low-voltage Capacitor, proceed to Step 4.
- Refer to the Glossary for the regulatory definitions of these terms.
- Step 3** **Has your facility ever manufactured PCB Capacitors or PCB Equipment?** If the answer is yes, go to Step 3A; if no, go to Step 3B.
- Step 3A** If your facility has engaged in the manufacture of PCB Capacitors or PCB Equipment, then the PCB Small Capacitors must be disposed of:
- In an incinerator that complies with the facility specifications at 40 CFR 761.70 [40 CFR 761.60(b)(2)(iv)], or
 - In a facility using an alternative disposal method that has been approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).
- Step 3B** If your facility has never engaged in manufacture of PCB Capacitors or PCB Equipment, PCB Small Capacitors may be disposed of as municipal solid waste [40 CFR 761.60(b)(2)(ii)].

Caution

DOE Personnel should consider whether disposal of PCB Small Capacitors as municipal solid waste presents an environmental hazard or whether it could result in the release of a Reportable Quantity of PCBs under CERCLA. If several PCB Small Capacitors are to be disposed of, it may be prudent to dispose of the capacitors in an incinerator that complies with the facility specifications at 40 CFR 761.70 or in a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75. Some EPA Regions and states may prohibit disposal of even a small number of PCB Small Capacitors in a municipal waste landfill or may have developed other restrictions to disposal of more than a few PCB Small Capacitors. DOE Personnel should inquire about Regional and state policies prior to making a decision about the disposal of these capacitors.

If PCB Small Capacitors will be collected in a container prior to disposal in a chemical waste landfill, read the box titled "Storage Prior to Disposal in a Chemical Waste Landfill" for an example of a best management practice that could be implemented for the disposal of several PCB Small Capacitors.

Step 4 What is the concentration of PCBs in the large capacitor?

Step 4A Capacitors with PCB concentrations of ≥ 50 but < 500 ppm must be disposed of as follows [40 CFR 761.60(b)(4)]:

- In an incinerator that complies with the facility specifications at 40 CFR 761.70,
- In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75, or
- In a facility using an alternative disposal method that has been approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).

Clarification

Storage Prior to Disposal in a Chemical Waste Landfill

If PCB Large Low-voltage Capacitors or PCB Large High-voltage Capacitors containing PCBs at concentrations of < 500 ppm will be disposed of in a chemical waste landfill, the capacitors must be placed in containers that comply with the following Department of Transportation (DOT) regulations:

- 49 CFR 178.80 (Specification 5),
- 49 CFR 178.82 (Specification 5B),
- 49 CFR 178.115 (Specification 17C), and
- 49 CFR 178.118 (Specification 17H).

Capacitors that are too big to fit inside one of these containers must be placed in a container that has strength and durability equivalent to the DOT specification containers. The larger containers must provide as much protection against leaking and exposure to the environment as the DOT specification containers.

Regardless of the container used, interstitial space in the container must be filled with sufficient absorbent material (e.g., sawdust or soil) to absorb any liquid PCBs remaining in the capacitors [40 CFR 761.60(b)(2)(vi)].

Step 4B Capacitors with PCB concentrations of ≥ 500 ppm must be disposed of as follows [40 CFR 761.60(b)(2)(iii)]:

- In an incinerator that complies with the facility specifications of 40 CFR 761.70, or
- In a facility using an alternative disposal method that has been approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).

9.8.3 PCB-CONTAMINATED ELECTRICAL EQUIPMENT (CONTAINING PCBs AT CONCENTRATIONS OF 50 TO 499 PPM)

All PCB-contaminated Electrical Equipment, except capacitors (which are discussed in Section 9.8.2), must be disposed of by draining all free-flowing liquid from the electrical equipment [40 CFR 761.60(b)(4)]. The drained liquid must be disposed of in accordance with the requirements described in Module 9C. Disposal of the drained equipment is not regulated by TSCA. *Although drained equipment may be disposed of as municipal solid waste, PCB managers should consider more protective disposal to avoid potential CERCLA liability (see Section 9.2.3).*

PCB-contaminated Electrical Equipment includes the following types of equipment that contain (or can be assumed to contain) PCBs at concentrations of ≥ 50 ppm but < 500 ppm:

- Mineral oil transformers and other transformers with PCB concentrations of 50 to 499 ppm;
- Other heat transfer systems;
- Electric motors;
- Voltage regulators, switches, and electromagnets; and
- Other electrical equipment known or assumed to contain a PCBs at concentrations of 50 to 499 ppm.

Caution

PCB-contaminated Electrical Equipment that is assumed to contain a PCB concentration of < 500 ppm but is later determined to contain an actual PCB concentration of ≥ 500 ppm is subject to all of the disposal requirements of the higher concentration category (see Sections 9.8.1 and 9.8.5).

Clarification

Salvaging PCB-contaminated Electrical Equipment

EPA has interpreted smelting of transformer carcasses (to recover metal resources) that contained PCBs at concentrations of < 500 ppm to constitute authorized disposal [56 *Federal Register* 26741]. It is EPA policy that drained mineral oil transformer carcasses (i.e., transformers that contained PCBs at concentrations of < 500 ppm prior to being drained) and drained PCB-contaminated Electrical Equipment can be disposed of as scrap. However, the following restrictions apply:

- Spills or other uncontrolled discharges of PCBs that occur during salvaging operations are regulated as improper disposal, and subject the salvager to the spill clean-up requirements discussed in Chapter 12, "Spill Reporting and Cleanup."
- Salvaging must complete or terminate the useful life of the PCBs or PCB Items, in accordance with the definition of "disposal" at 40 CFR 761.3. Consult the Glossary in this manual for this definition. Salvaging that reclaims the metal resources found in the transformer case and coil generally constitutes disposal.

Salvaging that consists of disassembling the drained equipment to obtain parts intended for reuse in other transformers does not terminate the useful life of the equipment. Such salvaging is not permitted (USEPA 1986a). For additional information on salvage options for PCB-contaminated Electrical Equipment, see Appendix B.

If drained mineral oil transformer carcasses are salvaged or sold as scrap, the PCB manager must ensure that the scrap dealer or recycler complies with these restrictions. Therefore, it is important to investigate the scrap dealer or recycler to make sure that the operation is run in a responsible manner and to confirm that it is in compliance with applicable environmental regulations.

Regulatory Issue

Disposal of PCB-contaminated Articles by Incineration

EPA is considering amending the PCB regulations to formally allow PCB Articles with PCBs at concentrations of 50 to 499 ppm to be disposed of in an industrial furnace operating under a RCRA permit or a valid state air permit.

EPA currently only allows smelting of drained or flushed PCB hydraulic machines, drained PCB-contaminated transformers, and drained PCB-contaminated natural gas pipeline. This proposal could extend this option to other PCB Articles. The following operating conditions would have to be met:

- The PCB Articles are first drained of free-flowing PCB liquids, and
- The concentration of PCBs on the PCB Articles is determined by the use of a wipe sample.

Open burning of the materials in the core of a PCB-contaminated transformer would likely be prohibited. In addition, disposal of liquids with a PCB concentration of ≥ 50 ppm would likely not be permitted in an industrial furnace.

9.8.4 HYDRAULIC MACHINES (CONTAINING PCBs AT CONCENTRATIONS OF $\geq$ 50 PPM)

The flow chart and the supplemental information on the following pages will help you identify the TSCA requirements applicable to the disposal of hydraulic machines.

MODULE 9E
9.8.4 Hydraulic Machines (Containing PCBs at Concentrations of ≥ 50 ppm)

SUPPLEMENTAL INFORMATION FOR SECTION 9.8.4, PCB HYDRAULIC MACHINES (CONTAINING PCB CONCENTRATIONS OF ≥ 50 PPM)

- Step 1** **Start** – This section describes the disposal requirements applicable to hydraulic machines containing PCBs at concentrations of ≥ 50 ppm.
- Step 2** **What is the concentration of the PCBs in the hydraulic machine?** TSCA regulations differentiate between machines with PCB concentrations of 50 to 999 ppm and $\geq 1,000$ ppm. If the concentration is 50 to 999 ppm, go to Step 2A; otherwise, go to Step 2B.
- Step 2A** If the machine contains PCBs at a concentration between 50 to 999 ppm PCBs, the machine may be disposed of as municipal solid waste, provided that it has been drained of free-flowing liquid and the liquid is disposed of properly (see Module 9C, Section 9.6, for details on disposal of the liquid PCBs if the PCB concentration is < 500 ppm and Module 9B, Section 9.5, if the PCB concentration is ≥ 500 ppm) [40 CFR 761.60(b)(3)].
- Step 2B** If the machine contains PCBs at a concentration $\geq 1,000$ ppm PCBs, it must be drained of the liquid and flushed with a solvent containing < 50 ppm PCBs prior to disposal. The hydraulic machine may then be disposed of as municipal solid waste [40 CFR 761.60(b)(3)].

Caution

DOE Personnel should consider whether the disposal of PCB hydraulic machines as municipal solid waste presents an environmental hazard. More protective disposal may be prudent to avoid potential CERCLA liability.

Caution

PCB liquids that are removed from a hydraulic machine must be disposed of as described in Module 9B (Section 9.5) or Module 9C (Section 9.6) of this chapter, depending on the concentration of the PCBs in the hydraulic machine. Solvents used to flush the hydraulic machine may include kerosene, xylene, toluene, and other solvents in which PCBs are readily soluble.

When you flush a PCB hydraulic machine, it is important to remember two points with regard to the disposal of the resulting PCB-contaminated solvent:

Continued on next page

- Because TSCA considers any PCB material that has been diluted to have the original concentration of PCBs [40 CFR 761.1(b)], the concentration of PCBs in the contaminated solvent is considered to be the same as that of the drained PCBs (*Rollins v. EPA*, 1991); and
- The contaminated solvent may also be a hazardous waste subject to RCRA regulation. For example, if a solvent identified at 40 CFR Part 261.31 (i.e., an F-listed solvent) were used to flush the hydraulic machine, the resulting PCB-contaminated solvent would be considered a RCRA listed hazardous waste when disposed of. Alternatively, if the solvent was not listed at 40 CFR Part 261.31, it would be necessary to determine whether the resulting mixture exhibited any of the characteristics of a RCRA hazardous waste (see Section 2.5 for additional details).

If it is determined that the contaminated solvent is also a RCRA hazardous waste, each applicable waste management requirement of both RCRA and TSCA must be complied with. Where they conflict, the more stringent must be applied.

Precautionary measures should be taken so that the solvent flushing procedure is conducted in accordance with applicable safety and health standards as required by Federal or State regulations (see Chapter 14, "Other Regulatory Requirements").

Regulatory Issue

Disposal of Solvents Used in Decontamination

EPA may be considering clarifying the disposal requirements for solvents used to decontaminate PCB Articles. EPA interprets the dilution rule at 40 CFR 761.1(b) to require solvents that have been in contact with PCBs to be **disposed of** according to the **concentration of the original PCBs** in the PCB Article, not according to their actual PCB concentration (see Section 2.4.2). Nonetheless, EPA may consider an amendment to the decontamination provisions at 40 CFR 761.79 to allow hydrocarbon solvents to be disposed of by burning for energy recovery as if they were used oil (see Chapter 13, "Burning of Used Oil for Energy Recovery").

9.8.5 OTHER PCB ARTICLES (CONTAINING PCBs AT CONCENTRATIONS OF ≥ 50 PPM)

The flow chart and the supplemental information on the following pages will help you identify the TSCA requirements applicable to the disposal of other PCB Articles not covered elsewhere in Sections 9.8, including PCB Electrical Equipment with a PCB concentration of ≥ 500 ppm.

MODULE 9E
9.8.5 Other PCB Articles (Containing PCBs at Concentrations of ≥ 50 ppm)

SUPPLEMENTAL INFORMATION FOR SECTION 9.8.5, OTHER PCB ARTICLES (CONTAINING PCBs AT CONCENTRATIONS OF ≥ 50 PPM)

- Step 1** **Start** — This section describes the disposal requirements for other PCB Articles containing PCBs at concentrations of ≥ 50 ppm.
- Step 2** **What is the concentration of the PCBs in the PCB Article?** TSCA regulations differentiate between other PCB Articles containing PCBs at concentrations of 50 to 499 ppm and ≥ 500 ppm PCBs. If the concentration is 50 to 499 ppm, go to Step 2A; otherwise, go to Step 2B.
- Step 2A** PCB Articles containing PCBs at concentrations of 50 to 499 ppm must be disposed of by draining all of the free-flowing liquid from the article and disposing of the liquid as described in Module 9C, (Section 9.6) [40 CFR 761.60(b)(5)(ii)]. Disposal of the drained article is not regulated by TSCA.

Caution

Drained PCB Articles at PCB concentrations of < 500 ppm may be disposed of as municipal solid waste; however, DOE Personnel should consider whether this could present an environmental hazard. More protective disposal may be prudent to avoid potential CERCLA liability.

- Step 2B** PCB Articles containing PCBs at concentrations of ≥ 500 ppm must be disposed of as follows [40 CFR 761.60(b)(5)(i)]:
- In an incinerator that complies with the facility specifications at 40 CFR 761.70;
 - In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75, provided that all free-flowing liquids have been thoroughly drained from any articles before the articles are placed in the chemical waste landfill and the drained liquids are disposed of in an incinerator that complies with the facility specifications at 40 CFR 761.70; or
 - In a facility using an alternative disposal method that has been approved in accordance with 40 CFR 761.60(e) (see Section 9.2.5).

Clarification

Disposal of PCB Bushings

PCB Articles are required to be drained of liquids prior to disposal in a chemical waste landfill. To determine whether plastic filler material in bushings needs to be drained before disposing of the carcass, apply the "paint filter test" (see Section 9.2.10) to determine whether the filler material is a liquid or non-liquid. If the test indicates that the material is a liquid, it must be removed from the bushings prior to disposing of the carcass in a chemical waste landfill (USEPA 1988). *Note that PCB Articles, including bushings, are not required to be drained of liquids prior to disposal in a TSCA incinerator.*

9.9 MODULE 9F: DISPOSAL REQUIREMENTS FOR PCB CONTAINERS (CONTAINING PCBs AT CONCENTRATIONS OF ≥ 50 PPM)

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 9.3 to arrive at Module 9F.

Reminder

Waste PCB Materials → Direct contact/Contains PCBs → ≥ 50 ppm → PCB Containers
→ Module 9F

The flow chart and the supplemental information on the following pages will help you identify the TSCA requirements for the disposal of PCB Containers.

MODULE 9F
9.9 Disposal Requirements for PCB Containers
(Containing PCBs at Concentrations of ≥ 50 ppm)

SUPPLEMENTAL INFORMATION FOR SECTION 9.9, DISPOSAL REQUIREMENTS FOR PCB CONTAINERS (CONTAINING PCBs AT CONCENTRATIONS OF ≥ 50 PPM)

- Step 1** **Start** – This section describes the disposal requirements for PCB Containers containing PCBs at concentrations of ≥ 50 ppm.
- Step 2** **What is the concentration of the PCBs in the container?** TSCA requirements for disposal of the container depend upon the concentration of the PCBs in the container. If the concentration is 50 to 499, go to Step 2A; otherwise, go to Step 2B.
- Step 2A** If the concentration of the PCBs in the container is < 500 ppm, the container may be disposed of as municipal solid waste, provided that the PCB Container is first drained of all free-flowing liquid and any drained liquid is disposed of in accordance with TSCA requirements described in Module 9C, (Section 9.6) [40 CFR 761.60(c)(2)]. *You should consider more protective disposal to avoid potential CERCLA liability (see Section 9.2.3).*
- Step 2B** If the concentration of PCBs in the container is ≥ 500 ppm, the container must be:
- Disposed of by one of the following methods:
 - In an incinerator that complies with the facility specifications at 40 CFR 761.70; or
 - In a chemical waste landfill that complies with the facility specifications at 40 CFR 761.75, provided that, if the PCBs are in a liquid state, the PCB Container must first be drained and the PCB liquid disposed of in an incinerator that complies with the facility specifications at 40 CFR 761.70; or
 - Decontaminated in accordance with 40 CFR 761.79 [40 CFR 761.60(c)(1)].

Clarification

Decontamination of PCB Containers

PCB Containers may be decontaminated in lieu of disposal. PCB Containers are decontaminated by flushing the internal surfaces of the container 3 times with a solvent containing a PCB concentration of < 50 ppm. The solubility of PCBs in the solvent must be $\geq 5\%$ by weight. Each rinse must use a volume of the normal diluent equal to approximately 10% of the PCB Container's capacity.

The solvent may be reused for decontamination until it contains PCBs at a concentration of ≥ 50 ppm. The solvent and any non-liquid PCBs resulting from the decontamination procedures must be disposed of as described in Chapter 9, "Disposal". The solvent is considered to have diluted the PCBs in the container; therefore, the concentration of PCBs in the contaminated solvent is considered to be the same as that of the original concentration of the PCB Container for the purpose of disposal [40 CFR 761.79(a)]. In addition, the contaminated solvent may be a hazardous waste subject to RCRA regulation (see Section 2.5).

A recent court case involved the disposal of solvent used to rinse a concrete basin with a hypalon liner that had contained liquids and sludges with a PCB concentration of 1,874.8 ppm. After the final rinsing of the basin with the solvent, analysis of the PCB concentration in the solvent indicated that it contained < 50 ppm. The solvent was not disposed of according to the TSCA regulations for liquid PCBs with a concentration ≥ 500 ppm. The Appeals Court agreed with EPA's interpretation of the decontamination regulations at 40 CFR 761.79(a) that, for the purpose of reusing solvents, PCB concentration should be measured on the basis of the actual concentration of PCBs in the solvent, whereas, for the purpose of disposal, the solvent must be assumed to contain a concentration of PCB equal to the PCB concentration in the container before it was flushed (Rollins v. EPA, 1991).

Precautionary measures must be taken to ensure that the decontamination process complies with applicable safety and health regulations (see Chapter 14, "Other Regulatory Requirements") [40 CFR 761.79(a)].

9.10 REFERENCES

Rollins v. EPA. 1991. U.S. Court of Appeals for the District of Columbia Circuit. *Rollins Environmental Services (NJ) Inc. v. U.S. Environmental Protection Agency*. Case No. 90-1508. Petition for Review of a Final Decision of the Environmental Protection Agency. July 5, 1991.

USEPA. 1983. Office of Pesticides and Toxic Substances. TSCA Compliance Program Policy No. 6-PCB-2, "Distillation, Solvent Extraction, Filtration, and Other Physical Separation Methods for PCBs." August 16, 1983.

USEPA. 1985. Office of Pesticides and Toxic Substances. TSCA Compliance Program Policy No. 6-PCB-4, "Disposal Methods for PCBs in Sludge." August 13, 1985.

USEPA. 1986a. U.S. Environmental Protection Agency. In: Test methods for evaluating solid waste: physical/chemical methods (SW-846), 3rd. ed. Vols. IA, IB, IC, and II. Doc No. 955-001-00000-1.

USEPA. 1986b. Office of Pesticides and Toxic Substances Policy Letter. September 9, 1986.

USEPA. 1988. Office of Pesticides and Toxic Substances Policy Letter. April 7, 1988.

USEPA. 1989. Office of Toxic Substances Issue Statement, "Determination Regarding the Scope of 40 CFR 761.60(a)(4)." November 28, 1989.

9.11 CHECKLIST FOR CHAPTER 9 – DISPOSAL

The following checklist allows PCB managers to determine how well they are complying with TSCA PCB disposal regulations. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of non-compliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	If bulk liquid PCBs are processed into non-liquids for disposal in a chemical waste landfill, is the PCB concentration of the liquids < 500 ppm?	_____	_____	_____
General	If any state regulations exist that are more restrictive or cover more situations than the Federal regulations, do disposal activities comply with these state regulations?	_____	_____	_____
General	Do disposal activities comply with all applicable regulations, including those not directly related to PCBs (e.g., RCRA waste, or PCBs contaminated with radioactive material)?	_____	_____	_____
General	Are spill materials containing PCBs at concentrations $\geq$ 50 ppm disposed of according to TSCA requirements?	_____	_____	_____

Continued on next page

Module	1 Yes	2 No	3 N/A
A			
Have all of the following uses of PCBs at concentrations of < 50 ppm been eliminated: road oiling, general dust control, as a pesticide or herbicide carrier, or as a rust preventative for pipes?			
A			
Has the use of waste oil containing any detectable amount of PCBs as a sealant, coating, or a dust control agent been eliminated?			
B			
Are liquid PCBs at concentrations of ≥ 500 ppm disposed of in a TSCA permitted incinerator?			
C			
Have you disposed of liquid PCBs, including mineral oil dielectric fluids, at PCB concentrations of 50 to 499 ppm?			
Were they disposed of in a TSCA permitted incinerator, chemical waste landfill, high-efficiency boiler, or by an EPA-approved alternative method?			
If these materials were landfilled, was the landfill operator notified that the liquids or mineral oils do not contain a PCBs at concentration of ≥ 500 ppm and are not ignitable?			
C			
Are non-liquid PCBs at PCB concentrations of ≥ 50 ppm in the form of contaminated soil, rags, or debris disposed of in a TSCA permitted incinerator, chemical waste landfill, or by an EPA-approved alternative method?			

Continued on next page

Module		1 Yes	2 No	3 N/A
C	Are dredged materials or municipal sewage treatment sludges containing PCBs at concentrations of ≥ 50 ppm disposed of in a TSCA permitted incinerator, chemical waste landfill, or by an EPA-approved alternative method?	_____	_____	_____
D	Are PCB Articles (except PCB Small Capacitors) removed from PCB Equipment prior to disposing of the equipment in a municipal solid waste landfill?	_____	_____	_____
E	Are PCB Transformers disposed of in a TSCA permitted incinerator, in a chemical waste landfill (after draining the PCBs and flushing the transformer with solvent), or by an EPA-approved alternative method?	_____	_____	_____
	Are any drained PCBs liquids and contaminated solvent from PCB Transformers disposed of in a TSCA permitted incinerator or by an EPA-approved alternative method?	_____	_____	_____
E	Are PCB Small Capacitors disposed of as municipal solid waste or in a more protective manner?	_____	_____	_____
E	Are PCB Large High-voltage or Low-voltage Capacitors containing PCBs at concentrations of 50 to 499 ppm disposed of in a TSCA permitted chemical incinerator, chemical waste landfill, or by an alternative disposal method approved by EPA?	_____	_____	_____

Continued on next page

Module	1 Yes	2 No	3 N/A
E Are PCB Large High-voltage or Low-voltage Capacitors containing PCBs at concentrations of ≥ 500 ppm PCBs disposed of in a TSCA permitted incinerator or in a facility using an alternative disposal method approved by EPA?	_____	_____	_____
E When PCB hydraulic machines containing PCBs at concentrations of 50 to 999 ppm are disposed of as municipal solid waste, have they been drained of all free-flowing liquids?	_____	_____	_____
E If the PCB liquids drained from PCB hydraulic machines contain PCBs at concentrations of 50 to 499 ppm, are the liquids disposed of in a TSCA permitted incinerator, chemical waste landfill, high-efficiency boiler, or by another method approved by EPA?	_____	_____	_____
E Are PCB hydraulic machines containing PCBs at concentrations of $\geq 1,000$ ppm drained of all free-flowing liquids and flushed with solvent containing < 50 ppm PCBs prior to disposal as municipal solid waste?	_____	_____	_____
E If the PCB liquids drained from PCB hydraulic machines and any contaminated solvent contain PCBs at concentrations of ≥ 500 ppm, are the liquids disposed of in a TSCA permitted incinerator?	_____	_____	_____
E Is PCB-contaminated Electrical Equipment (except capacitors) drained of all free-flowing liquid before disposal?	_____	_____	_____

Continued on the next page

Module		1 Yes	2 No	3 N/A
E	Are the PCB liquids drained from PCB-contaminated Electrical Equipment disposed of in a TSCA permitted incinerator, chemical waste landfill, high-efficiency boiler, or in an alternative facility approved by EPA?	_____	_____	_____
E	When PCB Articles (except transformers, capacitors, hydraulic machines, and PCB-contaminated Electrical Equipment) containing PCBs at concentrations of 50 to 499 ppm are disposed of as municipal solid waste, are they first drained of all free-flowing liquid?	_____	_____	_____
	Are the PCB liquids drained from PCB Articles with a PCB concentration of 50 to 499 ppm disposed of in a TSCA permitted incinerator, chemical waste landfill, high efficiency boiler, or in an alternative facility approved by EPA?	_____	_____	_____
E	Are PCB Articles (except transformers, capacitors, and hydraulic machines) containing PCBs at concentrations of ≥ 500 ppm drained of PCB liquids prior to disposal in a TSCA permitted incinerator, in a chemical waste landfill, or by an alternative disposal method approved by EPA?	_____	_____	_____
	Are the PCB liquids drained from PCB Articles with a PCB concentration of ≥ 500 ppm disposed of in a TSCA permitted incinerator?	_____	_____	_____
F	When PCB Containers containing PCB liquids at a concentrations of < 500 ppm are disposed of as municipal solid waste, are they first drained of PCB liquid?	_____	_____	_____

continued on next page

Module	1 Yes	2 No	3 N/A
F	Are PCB Containers containing PCB liquids at concentrations of ≥ 500 ppm either decontaminated in accordance with 40 CFR 761.79, or disposed of in a TSCA permitted incinerator, or in a chemical waste landfill (after draining the liquid)? _____		

For all applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 10

RECORDKEEPING AND REPORTING

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10.1 INTRODUCTION

This chapter covers the TSCA recordkeeping and reporting requirements at 40 CFR 761.180 for facilities where PCBs and PCB Items are managed.

The recordkeeping requirements for PCB waste are closely related to the manifesting requirements explained in Chapter 8, "Transport of PCBs and PCB Items." Manifest records are used to track the movement of PCB waste from the generator's facility to the site of the waste's ultimate disposal. DOE Personnel are required to maintain copies of all the manifests and Certificates of Disposal generated for or received by a facility for each calendar year in the facility's annual records. In addition, an annual document log must be maintained. The annual document log summarizes selected information from the manifests and presents an overall picture of PCB activities at the facility. An annual report to EPA, which summarizes information from the document log and the annual records, is required from a commercial storer or disposer. Reporting is often required when a facility's records indicate a possible compliance problem. For example, if a facility's records indicate that certain PCB waste was removed from service but was not disposed of within one year, as required, the facility would be required to report the incident to the EPA Region.

The regulations at 40 CFR Part 761 also impose some recordkeeping and reporting requirements on PCBs and PCB Items in service. These regulations are also discussed in this chapter.

The following additional recordkeeping and reporting requirements are not covered in this chapter, because they are not generally expected to apply to DOE facilities:

- Certification program and retention of records by importers and persons generating PCBs in excluded manufacturing processes [40 CFR 761.185];
- Reporting by importers and by persons generating PCBs in excluded manufacturing processes [40 CFR 761.187]; and
- Maintenance of monitoring records by persons who import, manufacture, process, distribute in commerce, or use chemicals containing inadvertently generated PCBs [40 CFR 761.193].

This chapter does not cover the recordkeeping and reporting requirements for those PCB materials that are exempt from Subpart B of 40 CFR Part 761. Refer to Chapter 3, "Prohibited and Authorized Activities," for a description of the PCB materials exempt from Subpart B and a discussion of the applicable TSCA requirements.

DOE Personnel should refer to this guidance before engaging in any PCB-handling activities, whether involving PCB waste or PCBs and PCB Items in service. DOE Personnel should also use this chapter to verify that the facility's recordkeeping and reporting activities are in compliance with applicable regulations.

Where possible, all required records should be kept at a single location for each facility so that they are readily available for EPA inspection.

10.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

10.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Annual Document Log
- Annual Report
- Commercial storer of PCB waste
- Disposer of PCB waste
- Generator of PCB waste
- Incinerator
- Laboratory
- Manifest
- Small quantities for research and development
- Transporter of PCB waste

When confronted with an unfamiliar term, consult the Glossary.

10.2.2 RECORDS REQUIRED PRIOR TO FEBRUARY 5, 1990

All records and annual documents required to be prepared and maintained by 40 CFR 761.180 prior to February 5, 1990, must be maintained at the facility for the same length of

time as the annual document log and the annual records, i.e., for at least 3 years after the facility is no longer used for the storage or disposal of PCBs and PCB Items.

Note: February 5, 1990, was the date that the amendments to the disposal and storage regulations (i.e., the "Notification and Manifesting Rule," 54 Federal Register 52716) became effective.

In the case of chemical waste landfills, records must be maintained at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items [40 CFR 761.180(b)]. *It would be prudent to maintain records longer than the required period to be able to address any future CERCLA liability, should it arise.*

10.2.3 SPILL REPORTING

Requirements for reporting spills and leaks and all associated recordkeeping requirements are discussed in Chapter 12, "Spill Reporting and Cleanup." PCB Transformers involved in a fire-related incident incur special reporting requirements, also discussed in Chapter 12.

10.2.4 CALCULATING THE WEIGHT OF PCBs FOR RECORDKEEPING AND REPORTING PURPOSES

Some recordkeeping or reporting requirements call for the weight in kilograms of PCBs. Weight in kilograms may be calculated if:

- The internal volume occupied by the PCBs in containers and transformers is known and included in the reports, and
- Assumptions on the density of the PCBs contained in the containers or transformers are stated.

If the internal volume is not known, a best estimate may be used [40 CFR 761.180(b)(4)].

10.2.5 RECORDKEEPING AND REPORTING REQUIREMENTS FOR PCB TRANSFORMERS, PCB LARGE HIGH-VOLTAGE CAPACITORS, AND PCB CONTAINERS IN SERVICE

The TSCA regulations at 40 CFR Part 761 impose special recordkeeping and reporting requirements on the following PCB Items in service:

- PCB Transformers (i.e., transformers with a PCB concentration of ≥ 500 ppm),

- PCB Large High-voltage Capacitors, and
- PCB Containers.

The requirements discussed below are in addition to other recordkeeping and reporting requirements for PCB waste handlers, discussed in the modules of this chapter.

■ PCB Transformers

Records of the visual inspections conducted in compliance with 40 CFR 761.30(a)(1)(ix) (see Chapter 5, "Inspecting PCB Items") and records of the maintenance history of each PCB Transformer should be developed and maintained throughout the service life of the transformer and for at least 3 years after the transformer is disposed of [40 CFR 761.30(a)(1)(xii)]. These records must be kept for at least 3 years after disposal even if the PCB Transformer is reclassified to a PCB-contaminated Transformer or a non-PCB Transformer (USEPA 1992).

These records must be made available for inspection upon request by EPA and must contain the following information:

- The location of the PCB Transformer;
- The date of each visual inspection and the date that any leaks were discovered, if different from the inspection date;
- The name of the person performing the inspection;
- The location of any leaks;
- An estimate of the amount of dielectric fluid released from any leak;
- The date of any cleanup, containment, or repair performed; and
- The results of any containment and daily inspection required for uncorrected active leaks [40 CFR 761.30(a)(1)(xii)].

■ PCB Large High-voltage Capacitors

If one or more PCB Large High-voltage Capacitors are installed in a protected location (e.g., on a power pole, in a structure, or behind a fence), a record that identifies the PCB Capacitors must be kept by the owner or operator at the protected location [40 CFR 761.40(c)(2)(ii)].

The record required by 40 CFR 761.40(c)(2)(ii), described above, may be in the form of a sign affixed to the protected location (e.g., on the fence or entry door); the only requirement as to the nature of this record is that it must clearly identify the location of PCB Large High-voltage Capacitors within the protected location (USEPA 1992).

■ PCB Containers

When PCBs with a PCB concentration of ≥ 50 ppm are stored in PCB Containers, a record must be kept that includes, for each batch of PCBs, the quantity of the batch and the date the batch was added to the container.

The records must also contain the date, quantity, and disposition of any batch of PCBs removed from the container [40 CFR 761.65(c)(8)].

10.2.6 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program" states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environmental Guidance (EH-23) for instructions on how to proceed. EH-23 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

10.2.7 STATE REGULATIONS

The state in which the PCBs or PCB Items are located may have additional regulations that apply to recordkeeping and reporting of PCBs or PCB Items. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

10.2.8 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

Handlers of PCBs or PCB Items mixed with, contained in, or contaminated with RCRA hazardous waste must comply with the recordkeeping and reporting requirements of both TSCA (as described in this chapter) and RCRA. For generators, transporters, and operators of treatment, storage, or disposal facilities for RCRA hazardous waste, recordkeeping and reporting requirements include, but are not limited to:

- Records of test results and waste analyses,
- An inventory log of hazardous waste in storage,
- Release reports and incident reports,
- Inspection reports,
- Contingency plan implementation reports,
- Employee training records,
- Manifest records,
- Unmanifested waste reports, manifest discrepancy reports, and exception reports,
- Operating records,
- Biennial Reports, and
- Federal Facility Compliance Act (FFCA) reports.

The required recordkeeping and reporting activities for RCRA hazardous wastes are described in the RCRA regulations at 40 CFR Parts 262-268.

10.2.9 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentrations of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

10.3 MASTER FLOW CHART: RECORDKEEPING AND REPORTING

The flow chart and the supplemental information on the following pages will help you identify the TSCA recordkeeping and reporting requirements applicable to generators, storers, transporters, commercial storers, and disposers of PCB materials.

MASTER FLOW CHART: RECORDKEEPING AND REPORTING
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: RECORDKEEPING AND REPORTING

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with a RCRA hazardous waste?
5. Is the PCB material mixed with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers the reporting and recordkeeping requirements for all PCB waste-handling activities.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 10.2, "General Requirements and Considerations," which contains information about the recordkeeping and reporting requirements that could apply to handlers of any PCB wastes or PCB materials in service.

Step 2 **What type of PCB-handling activities occur at your facility?** (Choose all that apply.) If you are a PCB waste handler (i.e., generator, storer, transporter, commercial storer, or disposer of PCB waste), proceed to Step 3. Module 10D describes the recordkeeping and reporting requirements that apply to laboratories and users of PCBs in small quantities for research and development.

Step 3 **What type of PCB waste handler are you?** Recordkeeping and reporting requirements for waste handlers are contained in the following modules:

- Generators and storers (Module 10A)
- Transporters (Module 10B)
- Disposers and commercial storers (Module 10C)

Clarification

Storers vs. Commercial Storers of PCB Waste

A generator who stores only the generator's own waste is not required to seek approval as a commercial PCB storer. Generators who store their own PCB waste are subject to different recordkeeping and reporting requirements than commercial storers. A DOE facility would only be a commercial storer if it receives PCB wastes from another non-DOE facility. For example, if a DOE facility accepts PCB waste from another Federal agency the facility would be considered a commercial storer. DOE facilities receiving waste from other DOE facilities will be considered to be receiving it from a "related company" and therefore will not be considered to be commercially storing waste (USDOE 1990).

10.4 MODULE 10A: GENERATORS AND STORERS OF PCB WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 10.3 to arrive at Module 10A.

Reminder

PCB Handlers → PCB waste handling → Generator or storer of PCB waste
→ Module 10A

The sub-sections of this module describe the following types of records and reports, which are required for all generators and storers of PCB waste:

- Annual Records (see Section 10.4.1)
 - Manifest Records
 - Exception Reports
 - 1-year Exception Reports
- Annual Document Log (see Section 10.4.2)
 - Information on PCB Waste
 - Information of PCBs and PCB Items in Service
 - Records of Correspondence
- Additional Records (see Section 10.4.3)

10.4.1 ANNUAL RECORDS

Each facility using or storing at any one time the following PCBs or PCB Items in service or for disposal must develop and maintain at the facility (or at a central facility) all annual records of the disposition of PCBs and PCB Items [40 CFR 761.180(a)]:

- ≥ 45 kilograms (99.4 pounds) of PCBs contained in PCB Container(s),
- ≥ 1 PCB Transformers
- ≥ 50 PCB Large High-voltage Capacitors
- ≥ 50 PCB Large Low-voltage Capacitors

Facilities that do not use or store PCBs or PCB Items in service or for disposal in the quantities described above at any one time are not required to keep annual records. *These facilities must still maintain manifest records and generate reports as described by this section.*

The annual records must include the following:

- All signed manifests generated by the facility during the calendar year, and
- All Certificates of Disposal that have been received by the facility during the calendar year [40 CFR 761.180(a)(1)].

The annual records must be maintained by the owner or operator of the facility for at least 3 years after the facility ceases to use or store PCBs and PCB Items in the quantities listed above. The periods for which the records must be kept are automatically extended during the course of any outstanding enforcement action regarding the regulated activity [40 CFR 761.209(d)]. *It would be prudent to maintain records longer than 3 years to be able to address any future CERCLA liability, should it arise.*

The annual records must be available during normal business hours at the facility where they are maintained, for inspection by authorized EPA representatives. The owner or operator of the facility must know where these records are located.

■ Manifest Records

All generators and storers of PCB waste must keep the following documents in their records:

- A copy of each signed and dated manifest that is given to the initial transporter, until the generator receives a signed copy from the designated commercial storage or disposal facility that received the PCB waste [40 CFR 761.209(a)],

- The copy of the manifest that was signed by the commercial storer or disposer, for at least 3 years from the date the PCB waste was accepted by the initial transporter [40 CFR 761.209(a)], and
- A copy of each Certificate of Disposal that is received from disposers of PCB waste, for at least 3 years from the date the PCB waste was accepted by the initial transporter [40 CFR 761.218(d)].

■ Exception Report

If a generator of PCB waste does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated PCB commercial storage or disposal facility, the following steps must be taken:

- **Within 35 days** of the date the waste was accepted by the initial transporter, the generator must immediately contact the transporter and/or the owner or operator of the designated commercial storage or disposal facility to determine the status of the PCB waste [40 CFR 761.215(a)].
- **Within 45 days** of the date the waste was accepted by the initial transporter, the generator must submit an Exception Report to the Regional Administrator for the EPA Region in which the generator is located [40 CFR 761.215(b)].

The Exception Report must include:

- A legible copy of the manifest for which the generator does not have confirmation of delivery, and
- A cover letter signed by the generator or an authorized representative explaining the efforts taken to locate the PCB waste and the results of those efforts [40 CFR 761.215(b)].

■ 1-year Exception Report

It is important to note the distinction between an Exception Report, which notifies EPA that PCB waste has not been received at its destination, and a 1-year Exception Report, which notifies EPA that PCB waste has been stored for more than one year prior to disposal. Refer to Chapter 7, "Storage," Section 7.6.1, for more information on the 1-year time limit on the storage of PCB waste.

A generator of PCB waste who transferred PCBs or PCB Items to a disposer of PCB waste within 9 months of the date of removal from service for disposal, as indicated on the manifest or continuation sheet, must submit a 1-year Exception Report to the EPA Regional Administrator for the Region in which the generator is located, when the generator:

- Has not received a Certificate of Disposal confirming the disposal of the affected PCBs or PCB Items within 13 months from the date of removal from service, or
- Receives a Certificate of Disposal confirming disposal of the affected PCBs or PCB Items on a date more than 1 year after the date of removal from service [40 CFR 761.215(d)].

The 1-year Exception Report must include:

- A legible copy of any manifest or other written communication relevant to the transfer and disposal of the affected PCBs or PCB Items, and
- A cover letter signed by the generator or an authorized representative including:
 - The date(s) when the PCBs or PCB Items were removed from service for disposal,
 - The date(s) when the affected PCBs or PCB Items were transferred to a designated disposal facility,
 - The identity of the transporters, commercial storers, or disposers known to be involved with the transaction, and
 - The reason, if known, for the delay in disposing of the affected PCBs or PCB Items, within 1 year from the date of removal from service for disposal [40 CFR 761.215(e)].

Regulatory Issue

1-year Exception Report

EPA may be considering adding a time limit for submission of the 1-year Exception Report.

10.4.2 ANNUAL DOCUMENT LOG

Each facility must develop and maintain at the facility (or at a central facility) a written annual document log if using or storing the following quantities of PCBs or PCB Items in service or for disposal [40 CFR 761.180(a)]:

- ≥ 45 kilograms (99.4 pounds) of PCBs contained in PCB Container(s);
- ≥ 1 PCB Transformers;
- ≥ 50 PCB Large High-voltage Capacitors; or
- ≥ 50 PCB Large Low-voltage Capacitors.

Facilities that do not use or store PCBs or PCB Items in service or for disposal in the quantities described above at any one time are not required to keep an annual document log.

The annual document log, which contains detailed information on the PCB waste handling activities at the facility, must be prepared for each facility by July 1, covering the previous calendar year (January through December).

The annual document log must be maintained by the owner or operator of the facility for at least 3 years after the facility ceases to use or store PCBs and PCB Items in the quantities listed above. The period for which the annual document log must be kept is automatically extended during the course of any outstanding enforcement action regarding the regulated activity [40 CFR 761.209(d)]. *It would be prudent to maintain these logs longer than 3 years to be able to address any future CERCLA liability, should it arise.*

The annual document log must be available during normal business hours at the facility where it is maintained for inspection by authorized EPA representatives. The owner or operator of the facility must know where the log is located.

The written annual document log must include the following information:

- The name, address, and EPA identification number of the facility covered by the annual document log;
- The calendar year covered by the annual document log;
- The unique manifest number of every manifest generated by the facility during the calendar year;
- Information on PCB waste; and
- Information on PCBs and PCB Items in service.

The specific information required for PCB waste, PCBs in service, and PCB Items in service is discussed in the remainder of this section.

■ Information on PCB Waste

From each manifest and for unmanifested waste in storage for disposal, the annual document log must include specific information for each of the following types of PCB waste, as described below:

- Bulk PCB waste (e.g., in a tanker or truck)
 - Its weight in kilograms,
 - The first date it was removed from service for disposal,
 - The date it was placed into transport for off-site storage or disposal, and
 - The date of disposal, if known.
- PCB Article (i.e., each PCB Article not in a PCB Container or PCB Article Container)
 - The serial number (if available) or other means of identifying each PCB Article,
 - The weight in kilograms of the PCB waste in each PCB Article,
 - The date it was removed from service for disposal,
 - The date it was placed in transport for off-site storage or disposal, and
 - The date of disposal, if known.
- PCB Container
 - A unique number (assigned by the generator) identifying each PCB Container,
 - A description of the contents of each PCB Container, such as liquid, soil, cleanup debris, etc., including the total weight of the material in kilograms in each PCB Container,
 - The first date material placed in each PCB Container was removed from service for disposal,
 - The date each PCB Container was placed in transport for off-site storage or disposal, and
 - The date of disposal, if known.
- PCB Article Container
 - A unique number (assigned by the generator) identifying each PCB Article Container,
 - A description of the contents of each PCB Article Container, such as pipes, capacitors, electric motors, pumps, etc., including the total weight in kilograms of the content of each PCB Article Container,
 - The first date a PCB Article placed in each PCB Article Container was removed from service for disposal,

- The date the PCB Article Container was placed in transport for off-site storage or disposal, and
- The date of disposal, if known.

Caution

Remember that spills and accidental releases of PCB material are considered PCB waste generation; therefore, information about spilled PCB materials must be included in the annual document log.

In addition, at the end of the calendar year, the following information, which summarizes the PCB waste-handling activities of the facility for the calendar year, must be tabulated and added to the annual document log:

- The total weight in kilograms of bulk PCB waste that was placed into storage for disposal or were disposed of during the calendar year [40 CFR 761.180(a)(2)(ii)(A) and (a)(2)(iii)];
- The total number of PCB Articles by specific type that were placed into storage for disposal or were disposed of during the calendar year;
- The total weight in kilograms of PCBs in PCB Articles that were placed into storage for disposal or were disposed of during the calendar year [40 CFR 761.180(a)(2)(ii)(B) and (a)(2)(iii)];
- The total number of PCB Containers that were placed into storage for disposal or were disposed of during the calendar year;
- The total weight in kilograms of the contents of PCB Containers that were placed into storage for disposal or was disposed of during the calendar year [40 CFR 761.180(a)(2)(ii)(c) and (a)(2)(iii)];
- The total number of PCB Article Containers that were placed into storage for disposal or were disposed of during the calendar year; and
- The total weight in kilograms of the contents of PCB Article Containers that were placed into storage for disposal or were disposed of during the calendar year [40 CFR 761.180(a)(2)(ii)(D) and (a)(2)(iii)].

■ Information on PCBs and PCB Items In Service

The annual document log must include the following information on PCBs and PCB Items in service, including PCBs or PCB Items received or shipped to another facility owned or operated by the same generator:

- The total number of PCB Transformers remaining in service at the end of the calendar year [40 CFR 761.180(a)(2)(iv)];
- The total weight in kilograms of PCBs contained in the transformers remaining in service at the end of the calendar year [40 CFR 761.180(a)(2)(iv)];
- The total number of Large High-voltage PCB Capacitors remaining in service at the end of the calendar year [40 CFR 761.180(a)(2)(v)];
- The total number of Large Low-voltage PCB Capacitors remaining in service at the end of the calendar year [40 CFR 761.180(a)(2)(v)];
- The total weight in kilograms of any PCBs and PCB Items in PCB Containers remaining in service at the facility at the end of the calendar year [40 CFR 761.180(a)(2)(vi)]; and
- Identification of the contents of PCB Containers [40 CFR 761.180(a)(2)(vi)].

■ Records of Correspondence

Finally, a record must be kept in the written annual document log of each telephone call, or other means of verification agreed upon by both parties, made to each designated commercial storer or designated disposer to confirm receipt of PCB waste transported by an independent transporter, as required by 40 CFR 761.208 (see Chapter 8, "Transport of PCBs and PCB Items") [40 CFR 761.180(a)(2)(viii)].

10.4.3 ADDITIONAL RECORDKEEPING REQUIREMENTS FOR STORAGE FACILITIES

Each owner or operator of a TSCA PCB storage facility subject to the requirements of 40 CFR 761.65 (as described in Chapter 7, "Storage") must collect and maintain, for at least 3 years after the facility is no longer used for the storage of PCBs or PCB Items, the following data:

- All documents, correspondence, and data that have been provided to the owner or operator of the facility by any state or local government agency and that pertain to the storage of PCBs and PCB Items at the facility;
- All documents, correspondence, and data that have been provided to any state or local government agency by the owner or operator of the facility and that pertain to the storage of PCBs and PCB Items at the facility; and
- Any applications and related correspondence sent by the owner or operator of the facility to any local, state, or Federal authorities concerning waste water discharge permits, solid waste permits, building permits, or other permits or authorizations [40 CFR 761.180(f)].

It would be prudent to maintain records longer than 3 years to be able to address any future CERCLA liability, should it arise.

10.5 MODULE 10B: TRANSPORTERS OF PCB WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 10.3 to arrive at Module 10B.

Reminder

PCB Handlers → PCB waste handling → Transporter of PCB waste → Module 10B

Transporters of PCB waste (i.e., any person engaged in the transportation of regulated PCB waste by air, rail, highway, or water for purposes other than on-site consolidation by a generator) must keep a copy of each manifest signed by the generator, any previous transporters, and the next designated transporter, if applicable, or the owner or operator of the designated commercial storage or disposal facility for at least 3 years from the date the PCB waste was accepted by the initial transporter [40 CFR 761.209(b)(1)]. *It would be prudent to maintain records longer than 3 years to be able to address any future CERCLA liability, should it arise.*

The periods for which the manifests and shipping papers (if applicable) must be kept are automatically extended during the course of any outstanding enforcement action regarding the regulated activity [40 CFR 761.209(d)].

It should be noted that special recordkeeping and reporting requirements apply for transport of PCB waste by water or rail. These requirements are discussed at 40 CFR 761.209(b)(2), 40 CFR 761.208(b)(5)(ii), and 40 CFR 761.208(b)(6). Because water and rail shipments by DOE are not expected to occur, details of these requirements are not included in this guidance.

In many cases, DOE will be transporting waste to its own facilities; therefore, a PCB manifest will not need to accompany the shipment (see Chapter 8, "Transport of PCBs and PCB Items"). It may be helpful to keep a record of all PCB wastes that are shipped from or received by the facility as a best management practice so that the disposition of all PCB wastes can be determined.

10.6 MODULE 10C: DISPOSERS AND COMMERCIAL STORERS OF PCB WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 10.3 to arrive at Module 10C.

Reminder

PCB Handlers → PCB waste handling → Disposer or commercial storer of PCB waste → Module 10C

The sub-sections of this module describe the following types of records and reports, which are required for all disposers and commercial storers of PCB waste.

- Annual Records (see Section 10.6.1)
 - Manifest Records
 - Manifest Discrepancy Report
 - Unmanifested Waste Report
 - 1-year Exception Report
- Annual Document Log (see Section 10.6.2)
- Annual Report (see Section 10.6.3)
- Additional Records (see Section 10.6.4)
- Records for Incinerators (see Section 10.6.5)
- Records for Chemical Waste Landfills (see Section 10.6.6)
- Records for High Efficiency Boilers (see Section 10.6.7)

10.6.1 ANNUAL RECORDS

■ Manifest Records

The owner or operator of any PCB disposal or commercial storage facility that receives off-site shipments of PCB waste must keep at the facility:

- A copy of each manifest or shipping paper that the owner or operator signs in accordance with the manifest requirements at 40 CFR 761.208(c)(1) and (c)(3) (see Chapter 8, "Transport of PCBs and PCB Items") [40 CFR 761.209(c)]; and
- A copy of each Certificate of Disposal that is generated or received at the facility. The Certificates of Disposal should be kept with the annual document log (see Section 10.6.2) [40 CFR 761.218(c) and (d)(2)].

Certificates of Disposal must be retained for at least 3 years after the facility is no longer used for the storage or disposal of PCBs and PCB Items. *It would be prudent to maintain records longer than 3 years to be able to address any future CERCLA liability, should it arise. Certificates of Disposal generated by chemical waste landfills should be kept for at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items.* In the event of an enforcement action regarding the regulated activity (i.e., PCB waste handling), the 3-year record retention period is automatically extended throughout the course of the enforcement action [40 CFR 761.209(d)].

In many cases, DOE will be transporting waste to its own facilities; therefore, a PCB manifest will not need to accompany the shipment (see Chapter 8, "Transport of PCBs and PCB Items"). It may be helpful to keep a record of all PCB wastes that are shipped from or received by the facility as a best management practice so that the disposition of all PCB wastes can be determined.

■ Manifest Discrepancy Report

Manifest discrepancies are differences between the quantity or type of PCB waste designated on the manifest or shipping paper and the quantity or type of PCB waste actually delivered to and received by a designated facility [40 CFR 761.210(a)].

Significant discrepancies in **quantity** are:

- Variations of > 10 percent in weight of PCB waste in containers, or
- Any variation in piece count (e.g., a discrepancy of one PCB Transformer or PCB Container or PCB Article Container in a truckload) [40 CFR 761.210(a)(1)].

Significant discrepancies in **type** of PCB waste are obvious differences that may be discovered by inspection or waste analysis (e.g., the substitution of solids for liquids or the substitution of high concentration materials with materials in a lower concentration category) [40 CFR 761.210(a)(2)].

Upon discovering a significant discrepancy, the owner or operator of the designated commercial storage or disposal facility must attempt to reconcile the discrepancy with the waste generator or transporter [40 CFR 761.210(b)]. *Note: It is a good idea to keep a record of your discussions with the generator and transporter(s) and a copy of any correspondence regarding the discrepancy in your files.*

If the discrepancy is not resolved within 15 days after the commercial storage or disposal facilities received the PCB waste, the owner or operator must immediately submit to the EPA Regional Administrator for the Region in which the designated facility is located:

- A letter describing the discrepancy and attempts to reconcile it, and
- A copy of the manifest or shipping paper at issue [40 CFR 761.210(b)].

■ Unmanifested Waste Report

If a PCB commercial storage or disposal facility receives any shipment of PCB waste from an off-site source without an accompanying manifest or shipping paper (where required in place of a manifest), and any part of the shipment consists of any PCB waste regulated for disposal, then the owner or operator of the commercial storage or disposal facility must attempt to contact the generator, using information supplied by the transporter, to obtain a manifest or to return the PCB waste [40 CFR 761.211(a)]. *It is a good idea to keep a record of your discussions with the generator and a copy of any correspondence regarding the unmanifested waste in your files.*

If the owner or operator of the commercial storage or disposal facility cannot contact the generator of the PCB waste, he or she must notify the Regional Administrator of the EPA Region in which the commercial storage or disposal facility is located of the unmanifested PCB waste [40 CFR 761.211(b)]. See Appendix E for the names and phone numbers of EPA Regional contacts. The Regional Administrator will then determine whether further actions are required before the owner or operator may store or dispose of the unmanifested PCB waste [40 CFR 761.211(b)].

In either case, within 15 days after receiving the unmanifested PCB waste, the owner or operator must prepare and submit an Unmanifested Waste Report to the Regional Administrator for the EPA Region in which the commercial storage or disposal facility is

located and to the Regional Administrator for the EPA Region in which the PCB waste originated, if known [40 CFR 761.211(c)].

The report may be submitted on EPA Form 8700-13B or by a written letter designated "Unmanifested Waste Report," and it must include the following information:

- The EPA identification number, name, and address of the PCB commercial storage or disposal facility;
- The date the commercial storage or disposal facility received the unmanifested PCB waste;
- The EPA identification number, name, and address of the generator and transporter, if available;
- A description of the type and quantity of the unmanifested PCB waste received at the facility;
- A brief explanation of why the waste was unmanifested; if known, and
- The disposition of the unmanifested waste, including:
 - If the waste was stored or disposed of by that facility, whether the generator was identified and whether a manifest was subsequently supplied, and
 - If the waste was sent back to the generator, why and when [40 CFR 761.211(c)].

■ 1-year Exception Report

A 1-year Exception Report notifies EPA that PCB waste has been stored for more than one year prior to disposal. Refer to Chapter 7, "Storage," Section 7.6.1, for more information about the 1-year time limit on the storage of PCB waste.

A **disposer** of PCB waste must submit a 1-year Exception Report to the Regional Administrator for the EPA Region in which the disposal facility is located whenever:

- The disposal facility receives PCBs or PCB Items on a date more than 9 months from the date the PCBs or PCB Items were removed from service for disposal, as indicated on the manifest or continuation sheet; and
- Because of contractual commitments or other factors affecting the facility's disposal capacity, the disposer of PCB waste could not dispose of the affected PCBs or PCB

Items within 1 year of the date of removal from service for disposal [40 CFR 761.215(c)].

A **commercial storer** of PCB waste who transferred PCBs or PCB Items to a disposer of PCB waste within 9 months of the date of removal from service for disposal, as indicated on the manifest or continuation sheet, must submit a 1-year Exception Report to the Regional Administrator for the EPA Region in which the commercial storer is located when the commercial storer:

- Has not received a Certificate of Disposal confirming the disposal of the affected PCBs or PCB Items within 13 months from the date of removal from service, or
- Receives a Certificate of Disposal confirming disposal of the affected PCBs or PCB Items on a date more than 1 year after the date of removal from service [40 CFR 761.215(d)].

The 1-year Exception Report must include:

- A legible copy of any manifest or other written communication relevant to the transfer and disposal of the affected PCBs or PCB Items, and
- A cover letter signed by the submitter or an authorized representative including
 - The date(s) when the PCBs or PCB Items were removed from service for disposal,
 - The date(s) when the affected PCBs or PCB Items were transferred to a designated disposal facility,
 - The identity of the transporters, commercial storers, or disposers known to be involved with the transaction,
 - The reason, if known, for the delay in disposal of the affected PCBs or PCB Items within 1 year from the date of removal from service for disposal [40 CFR 761.215(e)].

Regulatory Issue

1-year Exception Report

EPA is considering adding a time limit for submission of the 1-year Exception Report.

10.6.2 ANNUAL DOCUMENT LOG

Each owner or operator of a facility used for the commercial storage or disposal of PCBs and PCB Items (except for storage areas at transfer facilities where PCB waste is stored for < 10 days) must prepare and maintain a written annual document log for PCBs and PCB Items that were handled as PCB waste at the facility [40 CFR 761.180(b)].

Clarification

Recordkeeping Requirements for Storage Areas at Transfer Facilities

Storage areas for PCB waste at transfer facilities (i.e., any transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during the normal course of transportation) are subject to the storage facility standards of 40 CFR 761.65 (described in Chapter 7, "Storage"), but such storage areas are exempt from the recordkeeping requirements of 40 CFR 761.180 (described in this section) unless the same PCB waste is stored there for a period of more than 10 consecutive days between destinations [40 CFR 761.3]. Transport vehicles are not transfer facilities unless they are used for the storage of PCB waste rather than for actual transport activities.

The written annual document log must be maintained at each facility for at least 3 years after the facility is no longer used for the storage or disposal of PCBs and PCB Items. In the case of chemical waste landfills, the annual document log must be maintained at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items. *If would be prudent to maintain records longer than 3 years to be able to address any future CERCLA liability, should it arise.* The annual records and written annual document log must be available at the facility for inspection by authorized representatives of the EPA [40 CFR 761.180(b)].

The annual document log, which should contain detailed information on the PCB waste-handling activities at the facility, must be prepared for each facility by July 1 and cover the previous calendar year (January through December).

The written annual document log must include the following information [40 CFR 761.180(b)(2)]:

- The name, address, and EPA identification number of the storage or disposal facility covered by the annual document log,

- The calendar year covered by the annual document log,
- The unique manifest number of every manifest generated or received by the facility during the calendar year,
- The name and address of the facility that generated each manifest, and
- Information on PCB waste.

The specific information required for PCB waste is discussed in the remainder of this section.

For each manifest generated or received by the facility, the annual document log must include specific information for each of the following types of PCB waste, as described below:

- **Bulk PCB waste** (e.g., in a tanker or truck)
 - Its weight in kilograms,
 - The first date the PCB waste placed in the tanker or truck was removed from service for disposal,
 - The date it was received at the facility,
 - The date it was placed into transport for off-site disposal (if applicable), and
 - The date of disposal (if known) [40 CFR 761.180(b)(2)(ii)(A)].
- **PCB Article** (i.e., each PCB Article not in a PCB Container or PCB Article Container)
Note: these articles are expected to be primarily transformers, Large High-voltage Capacitors, and Large Low-voltage Capacitors.
 - The serial number (if available) or other means of identifying each PCB Article,
 - The weight in kilograms of the PCB waste in each PCB Article,
 - The date the PCB Article was removed from service for disposal,
 - The date it was received at the facility,
 - The date it was placed in transport for off-site disposal (if applicable), and
 - The date of disposal (if known) [40 CFR 761.180(b)(2)(ii)(B)].
- **PCB Container**
 - The unique number assigned by the generator identifying each PCB Container,
 - A description of the contents of each PCB Container (e.g., liquid, soil, cleanup debris)
 - The total weight in kilograms of the PCB waste in each PCB Container,

- The first date PCB waste placed in each PCB Container was removed from service for disposal,
- The date the PCB waste was received at the facility,
- The date each PCB Container was placed in transport for off-site storage or disposal (as applicable), and
- The date the PCB Container was disposed of (if known) [40 CFR 761.180(b)(2)(ii)(C)].

- **PCB Article Container**

- The unique number (assigned by the generator) identifying each PCB Article Container,
- A description of the contents of each PCB Article Container (e.g., pipes, capacitors, electric motors, pumps),
- The total weight in kilograms of the contents of each PCB Article Container,
- The first date a PCB Article placed in each PCB Article Container was removed from service for disposal,
- The date the PCB Article was received at the facility,
- The date the PCB Article Container was placed in transport for off-site storage or disposal (as applicable), and
- The date the PCB Article Container was disposed of (if known) [40 CFR 761.180(b)(2)(ii)(D)].

Clarification

Disposers of PCB Waste

Disposers of PCB waste must also include in the annual document log the confirmed date of disposal of all bulk PCB waste and waste PCB Items described in the annual document log [40 CFR 761.180(b)(2)(ii)(E)].

10.6.3 ANNUAL REPORT

The annual report summarizes information from the written annual document log and annual records.

The annual report must contain the following information for PCBs and PCB Items that were handled as PCB waste at the facility during the previous calendar year (January

Caution

For all PCB waste that was disposed of at a facility that generated the PCB waste or for all PCB waste received at a facility without a manifest, the facility also must maintain the same information in the annual document log, as is required for manifested waste [40 CFR 761.180(b)(2)(iii)].

Remember that spills and accidental releases of PCB material are considered PCB waste generation; therefore, information about spilled PCB materials must be included in the annual document log.

Regulatory Issue

When an Annual Report is Required

EPA is considering revising the Annual Report requirement at 40 CFR 761.180(b)(3) to clarify that a disposer's obligation to submit an Annual Report is based on the act of disposing of PCB waste and is not dependent on whether manifests were received or generated at the facility. This means that a disposal facility that disposes of only its own PCB waste would be required to submit an Annual Report even if it was not required to manifest waste shipments.

through December) [40 CFR 761.180(b)(3)]:

- The name, address, and EPA identification number of the storage or disposal facility covered by the annual report for the calendar year [40 CFR 761.180(b)(3)(i)], and
- A list of the numbers of all signed manifests of PCB waste initiated or received by the facility during that year [40 CFR 761.180(b)(3)(ii)].

For bulk PCB waste and for each PCB Item category, as appropriate (PCB Transformers, PCB Large High-voltage Capacitors, PCB Large Low-voltage Capacitors, PCB Containers, and PCB Article Containers), the annual report must contain the **total weight in kilograms** of PCB waste:

- In storage at the beginning of the calendar year,
- Received or generated at the facility during the calendar year,

- Transferred to another facility or disposed of at the facility during the calendar year, and
- Remaining in storage for disposal at the facility at the end of the calendar year [40 CFR 761.180(b)(3)(iii) and (b)(3)(v)].

In addition, the annual report must contain, by category, the **total number** of PCB Transformers, PCB Large High-voltage Capacitors, PCB Large Low-voltage Capacitors, PCB Containers, and PCB Article Containers that are:

- In storage at the beginning of the calendar year,
- Received or generated at the facility during the calendar year,
- Transferred to another facility or disposed of at the facility during the calendar year, and
- Remaining in storage for disposal at the facility at the end of the calendar year [40 CFR 761.180(b)(3)(iv) and (b)(3)(vi)].

The annual report must be submitted by July 15 of each year for the preceding calendar year. If the facility ceases commercial PCB storage or disposal operations, the owner or operator of the facility must provide at least 60 days advance written notice of the date the facility intends to begin closure [40 CFR 761.180(b)].

The requirement to submit annual reports to the Regional Administrator continues until the submission of the annual report for the calendar year during which the facility ceases PCB storage or disposal operations. For regulatory purposes, storage operations have not ceased until all PCB waste, including any PCB waste generated during closure, has been removed from the facility [40 CFR 761.180(b)(3)(vii)].

The annual report must not contain confidential business information [40 CFR 761.180(b)(3)].

10.6.4 ADDITIONAL RECORDKEEPING REQUIREMENTS FOR DISPOSAL AND COMMERCIAL STORAGE FACILITIES

Each owner or operator of a PCB disposal or commercial storage facility (i.e., incinerators, chemical waste landfills, high efficiency boiler operations, and alternative disposal facilities) must collect and maintain the following data [40 CFR 761.180(f)]:

- All documents, correspondence, and data that have been provided to the owner or operator of the facility by any state or local government agency and that pertain to the storage or disposal of PCBs and PCB Items at the facility [40 CFR 761.180(f)(1)];
- All documents, correspondence, and data that have been provided to any state or local government agency by the owner or operator of the facility and that pertain to the storage or disposal of PCBs and PCB Items at the facility [40 CFR 761.180(f)(2)];
- Any applications and related correspondence sent by the owner or operator of the facility to any local, state, or Federal authorities in regard to waste water discharge permits, solid waste permits, building permits, or other permits or authorizations (e.g., facility approvals required by 40 CFR 761.70(d) and 761.75(c)) [40 CFR 761.180(f)(3)].

PCB commercial storers and disposers (i.e., incinerators, high efficiency boilers, and alternative facilities) must maintain records for at least 3 years after the facility is no longer used for the storage or disposal of PCBs and PCB Items. In the case of chemical waste landfills, these special records must be maintained at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items [40 CFR 761.180(f)]. *It would be prudent to maintain records longer than 3 years to be able to address any future CERCLA liability, should it arise.*

10.6.5 INCINERATION FACILITIES

In addition to the information required in the facility's annual records, annual document log, and annual report, the owner or operator of a PCB incinerator facility must keep records of information pertaining to the operation of the incinerator.

When PCBs are being incinerated, the following continuous and short-interval data must be recorded and maintained in the facility's records [40 CFR 761.180(c)(1)]:

- The rate and quantity of PCBs fed to the combustion system, measured and recorded at regular intervals of no longer than 15 minutes, as required at 40 CFR 761.70(a)(3).
- Temperature of the combustion process, continuously monitored and recorded as required at 40 CFR 761.70(a)(4); and
- Quantities of stack emission products, including O₂ and CO, continuously monitored and recorded, and CO₂, periodically monitored and recorded at a frequency specified by the EPA Regional Administrator or Director, Chemical Management Division, as required at 40 CFR 761.70(a)(7).

When PCBs and PCB Items are being incinerated, additional data may be required to be collected and maintained by the EPA Regional Administrator pursuant to the authority granted him in 40 CFR 761.70(d)(4) [40 CFR 761.180(c)(4)].

In addition, each incineration facility's records should contain:

- Monitoring data for eight parameters (O_2 , CO, CO_2 , NO_x , HCl, RCl, PCBs, and total particulate matter) recorded when the incinerator is first used for the disposal of PCBs under the TSCA regulations at 40 CFR Part 761 and when the incinerator is first used after modifications that could affect the characteristics of the stack emission products, as required at 40 CFR 761.70(a)(6) [40 CFR 761.180(c)(2)], and
- The total weight in kilograms of any solid residues generated by the incineration of PCBs and PCB Items during the calendar year, the total weight in kilograms of any solid residues disposed of by the facility in chemical waste landfills, and the total weight in kilograms of any solid residues remaining on the facility site [40 CFR 761.180(c)(3)].

These records must be maintained for a period of **5 years** from the date of collection [40 CFR 761.180(c)].

Finally, upon any suspension of the operation of any incinerator pursuant to 40 CFR 761.70(a)(8) (i.e., due to failure of monitoring operations, measuring and recording equipment, or an excess oxygen level lower than that required), the owner or operator of the incinerator must prepare a document that, at a minimum, includes the date and time of the suspension of operation and an explanation of the circumstances causing the suspension. The document must be sent to the appropriate EPA Regional Administrator within 30 days of the suspension [40 CFR 761.180(c)(5)].

10.6.6 CHEMICAL WASTE LANDFILL FACILITIES

In addition to the information required in the facility's annual records, annual document log, and annual report, the owner or operator of a PCB chemical waste landfill facility must collect and maintain until at least **20 years** after the chemical waste landfill is no longer used for the disposal of PCBs [40 CFR 761.180(d)]:

- Any analysis of surface or ground water obtained in compliance with 40 CFR 761.75(b)(6)(iii) [40 CFR 761.180(d)(1)].
- Any operations records, including three-dimensional burial coordinates for PCBs and PCB Items and information on the PCB concentration in liquid wastes, obtained in

accordance with the operation plan submitted to the EPA Regional Administrator under 40 CFR 761.75(b)(8) [40 CFR 761.180(d)(2)].

Prior to the disposal of any PCBs and PCB Items in a chemical waste landfill, the owner or operator must submit an initial report to receive approval (*i.e., an operating permit*) from the Regional Administrator in the EPA Region in which the landfill is located. This guidance document does not cover the detailed TSCA requirements for obtaining approval. The information that must be included in the initial report to receive a TSCA approval for a chemical waste landfill is described at 40 CFR 761.75(c).

10.6.7 HIGH EFFICIENCY BOILER FACILITIES

In addition to the information required in the facility's annual records, annual document log, and annual report, the owner or operator of a high efficiency boiler facility must collect and maintain for at least **5 years** [40 CFR 761.180(e)]:

- The carbon monoxide and excess oxygen data, as required at 40 CFR 761.60(a)(2)(iii)(A)(8) and 40 CFR 761.60(a)(3)(iii)(A)(8) for each month PCBs are burned in the boiler [40 CFR 761.180(e)(1)];
- The quantity of PCBs burned each month, as required in 40 CFR 761.60(a)(2)(iii)(A)(7) and 40 CFR 761.60(a)(3)(iii)(A)(7) [40 CFR 761.180(e)(2)]; and
- Chemical analysis data of the waste, as required at 40 CFR 761.60(a)(3)(iii)(B)(6) for each month PCBs (other than mineral oil dielectric fluid) are burned [40 CFR 761.180(e)(3)].

Finally, the owner or operator of the boiler must keep records of the carbon monoxide concentration and excess oxygen percentage in the stack gas while burning mineral oil dielectric fluid or other waste fluids with a PCB concentration of ≥ 50 ppm PCBs and < 500 ppm PCBs, as monitored in accordance with 40 CFR 761.60(a)(2)(iii)(A)(6) and 40 CFR 761.60(a)(3)(iii)(A)(6).

10.7 MODULE 10D: LABORATORIES AND USERS OF SMALL QUANTITIES OF PCBs FOR RESEARCH AND DEVELOPMENT

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 10.3 to arrive at Module 10D.

Reminder

PCB Handlers → Use in laboratories or in small quantities for research and development → Module 10D

This module contains the following sub-sections:

10.7.1 Laboratories

10.7.2 Processors and Distributors of Small Quantities for Research and Development

10.7.1 LABORATORIES

Laboratories must maintain a copy of each manifest for shipments of PCB waste to a commercial storer or disposer (see Section 8.2.7 for further information on manifesting). *Although the TSCA regulations do not specifically require it, it would be a good idea to keep these copies, and copies of any Certificates of Disposal received by the facility, for at least 3 years after the facility no longer handles PCBs.*

1-year Exception Reports must be submitted if the laboratory [40 CFR 761.65(i)(4)]:

- Has not received a Certificate of Disposal confirming the disposal of the affected PCBs or PCB Items within 13 months from the date of removal from service, or
- Receives a Certificate of Disposal confirming disposal of the affected PCBs or PCB Items on a date more than 1 year after the date of removal from service [40 CFR 761.215(d)].

The 1-year Exception Report must include:

- A legible copy of any manifest or other written communication relevant to the transfer and disposal of the affected PCBs or PCB Items; and
- A cover letter signed by the generator or an authorized representative including:
 - The date(s) when the PCBs or PCB Items were removed from service for disposal;
 - The date(s) when the affected PCBs or PCB Items were transferred to a designated disposal facility;
 - The identity of the transporters, commercial storers, or disposers known to be involved with the transaction; and
 - The reason, if known, for the delay in disposal of the affected PCBs or PCB Items, within 1 year from the date of removal from service for disposal [40 CFR 761.215(e)].

Samples analyzed for PCBs are considered taken out of service (and, therefore, PCB wastes) when the PCB concentration of the sample has been determined and its use is terminated [40 CFR 761.65(i)(4)].

Regulatory Issue

1-year Exception Report

EPA is considering adding a time limit for submission of the 1-year Exception Report.

10.7.2 PROCESSORS AND DISTRIBUTORS OF SMALL QUANTITIES FOR RESEARCH AND DEVELOPMENT

The EPA Administrator has granted a class exemption from the PCB requirements to all processors and distributors of PCBs used in small quantities for research and development, provided:

- The processors and distributors maintain records of their PCB activities (*e.g., facility location, quantities and concentrations of PCBs handled, processing conducted*) for a period of 5 years (USEPA 1992); and

- Any person or company that expects to process or distribute in commerce ≥ 100 grams (0.22 pounds) of PCBs in 1 year must report to EPA and identify the sites of PCB activities and the quantity of PCBs to be processed or distributed in commerce [40 CFR 761.80(g)].

10.8 REFERENCES

USDOE 1990. U.S. Department of Energy. Office of Environmental Guidance. TSCA information brief: PCB manifesting, tracking, and disposal requirements. Washington, DC: U.S. Department of Energy. EH-231-001.

USEPA. 1992. U.S. Environmental Protection Agency. Telephone discussion between Geraldine Hilton, Operations Branch, Chemical Management Division, Office of Pollution Prevention and Toxics and Energetics, Inc., Columbia, MD. November 20, 1992.

10.9 CHECKLIST FOR CHAPTER 10 -- RECORDKEEPING AND REPORTING

The following checklist allows PCB managers to determine how well they are complying with TSCA PCB recordkeeping and reporting regulations. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of non-compliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Have you determined the recordkeeping and reporting requirements for spills and leaks of PCBs or fire-related incidents involving PCB Transformers?	_____	_____	_____
General	Do you maintain records of visual inspections of PCB Transformers?	_____	_____	_____
General	Do you maintain records of each PCB Transformer's maintenance history?	_____	_____	_____
General	Are PCB Large High-voltage Capacitors installed in a protected location?	_____	_____	_____
	Is a record kept at the location that identifies these capacitors?	_____	_____	_____
General	For each container of PCBs containing PCBs at concentrations of ≥ 50 ppm, is a record kept of the quantity and date each batch of PCBs was added or removed?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
General	If any state regulations exist that require additional recordkeeping and reporting, do your activities comply with these state regulations?	_____	_____	_____
General	Does recordkeeping and reporting for PCB material comply with all applicable Federal regulations (e.g., RCRA)?	_____	_____	_____
A	Is a copy of each manifest initiated or received by the facility kept in the facility's annual records?	_____	_____	_____
A	Is a copy of each Certificate of Disposal received kept in the facility's annual records?	_____	_____	_____
A	Are you tracking the timely delivery of your PCB waste shipments to a commercial storer or disposer?	_____	_____	_____
	Do you generate Exception Reports if you have not received a signed copy of the manifest within 45 days of the date the waste was accepted by the initial transporter?	_____	_____	_____
A	Do you keep track of the dates of removal from service and the dates of disposal of PCB waste so that you are able to prepare a 1-year Exception Report as necessary?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
A	Do you prepare a 1-year Exception Report if you receive a Certificate of Disposal that confirms disposal of PCBs or PCB Items more than 1 year after they were removed from service?	_____	_____	_____
A	Do you maintain all of the required information for the facility's annual document log?	_____	_____	_____
A	Are the annual records and annual document log available for inspection by authorized EPA representatives?	_____	_____	_____
A	Is information about spills and leaks included in the annual document log?	_____	_____	_____
A	Do you maintain copies of all documents, correspondence, and data exchanged by the facility and the state or any local government agency?	_____	_____	_____
B	If you are a transporter of PCB waste, do you keep a copy of each signed manifest or shipping paper?	_____	_____	_____
C	Is a copy of each manifest signed by the owner or operator of the facility and each Certificate of Disposal generated or received kept among the facility's records for at least 3 years after the facility's closure or for 20 years in the case of a chemical waste landfill?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
C	If you cannot resolve a manifest discrepancy within 15 days, do you submit a Manifest Discrepancy Report to the appropriate EPA Region?	_____	_____	_____
C	If you receive a shipment of PCB waste from any off-site source without an accompanying manifest or shipping paper, do you send an Unmanifested Waste Report to the appropriate EPA Region?	_____	_____	_____
C	Are you a disposer of PCB waste?	_____	_____	_____
	Do you keep track of the dates PCB waste was removed from service?	_____	_____	_____
	Do you prepare a 1-year Exception Report if you receive PCB waste that was removed from service > 9 months earlier?	_____	_____	_____
	Do you prepare a 1-year Exception Report when PCBs or PCB Items are not disposed of within 1 year of the date of removal from service?	_____	_____	_____
C	Are you a commercial storer of PCB waste?	_____	_____	_____
	Do you keep track of the dates PCB waste was removed from service and the dates of disposal?	_____	_____	_____

Continued on next page

Module	1 Yes	2 No	3 N/A
Do you prepare a 1-year Exception Report if you do not receive a Certificate of Disposal within 13 months of the date of removal from service?	_____	_____	_____
C Do you prepare a 1-year Exception Report if you receive a Certificate of Disposal that confirms disposal of PCBs or PCB Items more than 1 year after they were removed from service?	_____	_____	_____
C Do you maintain all of the required information for the facility's annual document log?	_____	_____	_____
C Are the annual records and annual document log available for inspection by authorized EPA representatives?	_____	_____	_____
C Do you submit an annual report that summarizes the information from the written annual document log?	_____	_____	_____
C Do you maintain copies of all documents, correspondence, and data exchanged by the facility and the state or any local government agency?	_____	_____	_____
C If you operate an incineration facility, chemical waste landfill, or high efficiency boiler, do you maintain the additional records required by TSCA for these methods of disposal?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
D	Is a copy of each manifest prepared or received by a laboratory kept in the laboratory's records?	_____	_____	_____
D	Are 1-year Exception Reports prepared by the laboratory when the manifests suggest that the PCBs will not be disposed of within 1 year of the date of removal from service?	_____	_____	_____
D	Are records of PCB activities maintained by processors and distributors of PCBs in small quantities for research and development?	_____	_____	_____
D	If ≥ 100 g of PCBs are expected to be processed or distributed in commerce in small quantities for research and development in 1 year, is a report sent to EPA identifying the sites of these activities and the quantities of PCBs involved?	_____	_____	_____

For applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 11
PCB WASTE ACTIVITY NOTIFICATION

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11.1 INTRODUCTION

This chapter identifies the generators, storers, transporters, and disposers of PCB waste who are subject to the TSCA PCB waste activity notification requirements and explains how to notify EPA. Upon receiving the required notification, EPA will either assign an EPA identification number to your facility if you do not already have one, or will confirm an existing EPA identification number (e.g., an identification number obtained under RCRA if you also handle hazardous waste). An EPA identification number is required for most PCB waste handling activities and is used on manifests, records, and reports (see Chapter 8, "Transport of PCBs and PCB Items," and Chapter 10, "Recordkeeping and Reporting").

Clarification

PCB Waste With a Concentration < 50 ppm PCBs

Please note that the TSCA notification requirements only apply to handlers of PCB waste with concentrations of ≥ 50 ppm PCBs; no notification requirements currently exist under TSCA for handlers of PCBs or PCB Items containing concentrations of < 50 ppm PCBs. Nonetheless, handlers of such waste should read Section 11.2, "General Requirements and Considerations," if their PCB waste also contains RCRA hazardous waste or is contaminated with radioactive material.

DOE Personnel should refer to this chapter if they are either currently involved or planning to be involved in generating, storing, transporting, or disposing of PCB waste.

11.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained first because they should be considered concurrently with the remainder of the requirements in this chapter.

11.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Commercial storer of PCB waste,
- Disposer of PCB waste,
- EPA identification number,
- Generator of PCB waste, and
- Transporter of PCB waste.

When confronted with an unfamiliar term, consult the Glossary.

11.2.2 NOTIFICATION PROCEDURES

Any person required to notify EPA (as indicated by the modules for this chapter) must file EPA Form 7710-53 with EPA. Copies of this form are available from:

Chemical Management Division (TS-798)
Office of Pollution Prevention and Toxics
Environmental Protection Agency
401 M St., SW
Washington, DC 20460

All of the following information must be provided to EPA on Items I through VII on EPA Form 7710-53:

- I. The name of the facility and the name of the owner or operator of the facility
- II. The EPA Identification Number, if any, previously issued to the facility
- III. The facility's mailing address
- IV. The location of the facility
- V. The facility's installation contact and telephone number
- VI. The type of PCB waste activity engaged in at the facility
- VII. The signature of the signer of the certification statement, typed or printed name and official title of the signer, and the date signed [40 CFR 761.205(a)(4)(i) - (vii)]

Clarification

Certification Statement

The certification statement required to accompany EPA Form 7710-53 must be signed and dated by the authorized representative of the facility. An "authorized representative" is the person responsible for the overall operation of the facility (54 *Federal Register* 52716).

Clarification

Confidential Information

The information submitted on EPA Form 7710-53 may be disclosed to the public without further notice to the submitter unless a written justification is submitted with the notification form that demonstrates extraordinary reasons why the information should be entitled to confidential treatment [40 CFR 761.205(a)(4)(viii)].

To file EPA Form 7710-53 with EPA, return the form to the Operations Branch at the address at the beginning of this section.

Upon notification, EPA will assign each notifier a 12-digit EPA identification number. The first two characters indicate the state in which the facility is located. For Federal agencies,

the remaining ten characters are usually the facility's General Services Administration Real Property Number (54 *Federal Register* 52716), which is unique for each facility.

Facilities that have previously complied with the notification requirements of RCRA are required to notify EPA again so that EPA can identify the location and nature of the facility's PCB waste activities and confirm the identification number previously issued (54 *Federal Register* 52716).

Regulatory Issue

Changes in Facility Status

EPA is considering clarifying its policy that the notifier must resubmit EPA Form 7710-53 to reflect changes in the facility status if a facility has previously notified EPA of its PCB waste handling activities and those activities change. Examples of changes in facility status include:

- Different PCB waste handling activities (e.g., a generator intends to begin disposing of PCB waste),
- Termination of PCB waste handling activities, and
- Changes in any of the facility information (e.g., location, transfer of ownership).

The notifier should indicate in a cover letter that the Form 7710-53 is submitted to revise a previous notification.

11.2.3 ONE-YEAR STORAGE LIMIT

The requirement to notify EPA and obtain EPA identification numbers does not excuse compliance by any person subject to the one-year limit on storage prior to disposal (see Chapter 7, "Storage," for details) [40 CFR 761.205(e)]. *In other words, the one-year storage limit discussed in Chapter 7 applies regardless of any delays in disposing of the waste that may occur as a result of compliance with the TSCA notification requirements.*

11.2.4 CONFLICTING REGULATIONS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environment (EH-20) for instructions on how to proceed. EH-20 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the nuclear criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

11.2.5 STATE REGULATIONS

The state in which the PCBs or PCB Items are located may have additional regulations that apply to notification of PCB waste handling activities. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

11.2.6 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

Handlers of PCBs and PCB Items mixed with, contained in, or contaminated with RCRA hazardous waste are subject to:

- Applicable PCB notification requirements, as defined in Modules 11A through 11D, and

- Applicable RCRA hazardous waste notification regulations, as defined in 40 CFR Parts 262-266.

All of the TSCA and RCRA requirements must be complied with. It is important to note that the RCRA regulations apply regardless of the concentration of PCBs. Thus, notification for PCBs and PCB Items with PCBs at concentrations of < 50 ppm may not be required by TSCA, but these materials may be subject to RCRA notification requirements.

11.2.7 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

11.3 MASTER FLOW CHART: PCB WASTE ACTIVITY NOTIFICATION

The flow chart and the supplemental information on the following pages will help you identify the PCB waste activity notification requirements applicable to your situation.

MASTER FLOW CHART: PCB WASTE ACTIVITY NOTIFICATION
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: PCB WASTE ACTIVITY NOTIFICATION

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers the notification requirements for PCB waste handlers.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 11.2, "General Requirements and Considerations," which contains information about the notification requirements that could apply to any current or potential PCB waste handler (i.e., generator, storer, transporter, or disposer).

Clarification

PCB Waste With a Concentration < 50 ppm PCBs

Note that the notification requirements only apply to handlers of PCB waste with concentrations of ≥ 50 ppm PCBs. Handlers of PCB wastes with concentrations of < 50 ppm PCBs should read "General Requirements and Considerations" if their PCB waste also contains RCRA hazardous waste or radioactive material. However, they need not read the modules in this chapter, which discuss TSCA requirements only.

Step 2 **What type of PCB waste handler are you?** Generators of PCB waste should proceed to Step 3; other PCB waste handlers should proceed to the appropriate module as indicated below:

- Storer (Module 11B),
- Transporter (Module 11C), or
- Disposer (Module 11D).

Be sure to read all modules that apply.

Step 3 **Are you an owner or operator of a TSCA PCB storage facility?** Generators who do not own or operate PCB storage facilities subject to the storage requirements for PCB waste at 40 CFR 761.65(b) or (c)(7) (Chapter 7, "Storage,") are exempt from the TSCA notification requirements. Module 11A describes TSCA's provisions for exempt generators so that they can prepare manifests, records, and reports properly.

Generators of PCB waste who use, own, service, or process PCBs or PCB Items and own or operate PCB storage facilities subject to the TSCA storage requirements are not exempt from the TSCA notification requirements [40 CFR 761.205(c)(2)]. The notification requirements for non-exempt generators (i.e., storers) can be found in Module 11B.

11.4 MODULE 11A: EXEMPT GENERATORS OF PCB WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 11.3 to arrive at Module 11A.

Reminder

PCB waste handlers → Generator → Exempt generator → Module 11A

Generators who do not own or operate a TSCA PCB storage facility subject to the storage requirements for PCB waste at 40 CFR 761.65(b) and 40 CFR 761.65(c)(7) (See Chapter 7, "Storage") are exempt from the TSCA notification requirements [40 CFR 761.205(c)(1)]. This exemption does not release exempt generators from the obligation to prepare manifests for their shipments of PCB wastes (54 *Federal Register* 52716).

On any manifests, records, and reports they are required to prepare under TSCA regulations (see Chapter 8, "Transport of PCBs and PCB Items," and Chapter 10, "Recordkeeping and Reporting"), exempt generators must use either:

- The generic identification number "40 CFR PART 761," or
- The unique EPA identification number that EPA or the state previously assigned to them under RCRA (if applicable) [40 CFR 761.205(c)(1)].

Caution

Generators of PCB waste are **prohibited** from offering PCB waste to transporters, disposers, or storers of PCB waste who have not received an EPA identification number [40 CFR 761.202(b)(1)(ii)].

11.5 MODULE 11B: STORERS OF PCB WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision paths that you should have taken in the Master Flow Chart in Section 11.3 to arrive at Module 11B.

Reminder

PCB waste handlers → Generator → Non-exempt generator → Module 11B

PCB waste handlers → Storer → Module 11B

Clarification

Generators and Storers of PCB Waste

According to the preamble to the Final Rule at 54 *Federal Register* 52716, "Polychlorinated Biphenyls: Notification and Manifesting for PCB Waste Activities," an owner of ... PCB material would be (a) generator when the owner ... ships electrical equipment off-site to be disposed of or serviced for reclassification, since these activities will produce regulated PCB waste." In addition, "a shipment originator, who combines PCB waste from different sources into a new commingled shipment, is a generator of PCB waste under this rule..." As a result, all storers of PCB waste, including commercial storers, would be considered generators, because even storage facilities that consolidate waste generated at other sites are considered generators under this definition.

Prior to engaging in PCB waste handling activities, storers (i.e., non-exempt generators) of PCB waste who first engage in PCB waste handling activities after February 5, 1990, must:

- Notify EPA by filing EPA Form 7710-53 and
- Receive an identification number [40 CFR 761.205(a)(2)].

Note: February 5, 1990, was the date that the amendments to the disposal and storage regulations (i.e., the "Notification and Manifesting Rule," 54 Federal Register 52716) became effective.

Non-exempt generators must submit a separate notification to EPA for each PCB storage facility owned or operated by the generator. Each site of generator storage is treated as a unique "generator of PCB waste" for the purposes of the TSCA PCB regulations [40 CFR 761.205(c)(2)]. Nonetheless, separate storage areas owned by the same generator on the same property do not require separate identification, although EPA will issue a unique EPA identification number for any entity that requests it (54 Federal Register 52716). *This interpretation of the notification requirements for storage areas located on the same property was confirmed in a letter from EPA to DOE (see Appendix C). On the other hand, if several properties are associated with one facility (e.g., a Power Marketing Administration facility), only those sites with PCB storage facilities need notify EPA and receive a separate identification number.*

Clarification

Storers Who Were Engaged in PCB Waste Handling Activities On or Before February 5, 1990

Storers who were engaged in PCB waste handling activities on or prior to February 5, 1990, should have applied for an EPA identification number by April 4, 1990. Those who did apply by the April 4, 1990, deadline were allowed to use the EPA identification number "40 CFR PART 761," or a number assigned to them by EPA or a state, under RCRA, on a temporary basis. Those facilities now should be using the EPA identification number issued pursuant to the facility's TSCA notification (i.e., EPA Form 7710-53). Storers engaged in PCB waste handling activities on or prior to February 5, 1990, who did not apply for an EPA identification number by the April 4, 1990, deadline should contact the appropriate EPA Region for guidance.

Caution

All storers are **prohibited** from:

- Processing, storing, accepting for storage, disposing of, transporting, or offering for transportation PCB waste, without having received an EPA identification number [40 CFR 761.202(b)(1)(i) and (b)(3)]; and
- Offering PCB waste to transporters, disposers, or commercial storers of PCB waste who have not received an EPA identification number [40 CFR 761.202(b)(1)(ii)].

Regulatory Issue

Notification Requirements for Storers of PCB Waste

EPA intends to clarify the notification requirements that apply to PCB storage facilities. The current regulations at 40 CFR Part 761 use the terms "storage facility" and "storage area" to mean both a particular building, structure, or unit and a contiguous piece of property that may contain many buildings and structures. A facility (i.e., property) that contains multiple storage areas or units is only required to notify once for a contiguous piece of property. EPA is considering the use of a term other than "facility" to refer to individual structures or units on a contiguous piece of property.

Clarification

Commercial Storers of PCB Waste

DOE facilities are not likely to be commercial storers of PCB waste, however, a facility that receives ≥ 500 gallons of liquid PCB waste for storage and the waste is generated or owned by a source other than DOE, including other Federal facilities, is a commercial storer [55 *Federal Register* 26204 and 54 *Federal Register* 52718]. In addition, if at any time a facility stores ≥ 500 gallons of PCB waste with a PCB concentration of ≥ 50 ppm and the waste was generated while servicing PCB equipment owned by others, the facility is also a commercial storer (USDOE 1990). DOE facilities that are commercial storers of PCB waste must notify EPA by filing EPA Form 7710-53 and must receive an identification number prior to engaging in commercial storage. Commercial storers are additionally subject to EPA approval requirements found at 40 CFR 761.65(d) and (e). Refer to Chapter 7, "Storage," for information about other TSCA requirements for commercial storers.

Clarification

Laboratories

Laboratories are exempt from the notification requirements for commercial storers, provided the samples are stored for disposal in a TSCA PCB storage facility that meets the requirements of 40 CFR 761.65(b)(1) (see Chapter 7, "Storage," Section 7.6.3) [40 CFR 761.65(i)(1)].

11.6 MODULE 11C: TRANSPORTERS OF PCB WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 11.3 to arrive at Module 11C.

Reminder

PCB waste handlers → Transporter → Module 11C

Prior to engaging in PCB waste handling activities, all transporters who first engage in PCB waste handling activities after February 5, 1990, must:

- Notify EPA by filing EPA Form 7710-53 and
- Receive an EPA identification number [40 CFR 761.205(a)(2)].

Note: February 5, 1990, was the date that the amendments to the disposal and storage regulations (i.e., the "Notification and Manifesting Rule," 54 Federal Register 52716) became effective.

Separate notifications are not required for transporters who also generate and/or store PCB waste (54 Federal Register 52716).

Clarification

Transporters Who Were Engaged in PCB Waste Handling Activities On or Before February 5, 1990

Transporters of PCB waste who were engaged in PCB waste handling activities on or prior to February 5, 1990, should have applied for an EPA identification number by April 4, 1990. Those who did apply were allowed to use the EPA identification number "40 CFR PART 761," or a number previously assigned to them by EPA or a state, under RCRA, on a temporary basis. Those facilities now should be using the EPA identification number issued pursuant to the facility's TSCA notification (i.e., EPA Form 7710-53). Transporters engaged in PCB waste handling activities on or prior to February 5, 1990, who did not apply for an EPA identification number by the April 4, 1990, deadline, should contact the appropriate EPA Region for guidance.

Caution

Transporters of PCB waste are **prohibited** from:

- Transporting PCB waste without having received an EPA identification number from EPA, and
- Delivering PCB waste to transporters, disposers, or commercial storers of PCB waste who have not received an EPA identification number [40 CFR 761.202(b)(2)].

11.7 MODULE 11D: DISPOSERS OF PCB WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 11.3 to arrive at Module 11D.

Reminder

PCB waste handlers → Disposer → Module 11D

Prior to engaging in PCB waste handling activities, all disposers of PCB waste who first engage in PCB waste handling activities after February 5, 1990, must:

- Notify EPA by filing EPA Form 7710-53 and
- Receive an EPA identification number [40 CFR 761.205(a)(2)].

Note: February 5, 1990, was the date that the amendments to the disposal and storage regulations (i.e., the "Notification and Manifesting Rule," 54 Federal Register 52716) became effective.

Clarification

Disposers Who Were Engaged in PCB Waste Handling Activities On or Before February 4, 1990

Disposers of PCB waste who were engaged in PCB waste handling activities on or before February 5, 1990, should have applied for an EPA identification number by April 4, 1990. Those who did apply by the April 4, 1990, deadline were allowed to use the EPA identification number "40 CFR PART 761," or a number previously assigned to them by EPA or a state, under RCRA, on a temporary basis. Those

Continued on next page

facilities now should be using the EPA identification number issued pursuant to the facility's TSCA notification (i.e., EPA Form 7710-53). Disposers of PCB waste engaged in PCB waste handling activities on or before February 5, 1990, who did not apply for an EPA identification number by the April 4, 1990, deadline, should contact the appropriate EPA Region for guidance.

Separate notifications are not required for disposers who also generate their own PCB waste; however, separate notifications must be submitted for each storage facility and disposal facility.

Clarification

Mobile Disposal Facilities

In the case of mobile disposal facilities, "mobile" should be written on EPA Form 7710-53 for the location of the facility (Item IV). The mailing address of the facility's installation contact (Item V) should be used as the facility's mailing address (Item III) (54 *Federal Register* 52716). Each mobile unit must have its own EPA identification number.

Caution

Disposers of PCB waste are **prohibited** from accepting any PCB waste for disposal unless they have first notified EPA and received an EPA identification number for each disposal facility or mobile disposal unit owned by the disposer [40 CFR 761.202(b)(4)].

11.8 REFERENCES

USDOE. 1990. U.S. Departmental of Energy. Office of Environmental Guidance. TSCA information brief: PCB manifesting, tracking, and disposal requirements. Washington, DC: Department of Energy. EH-231-001.

11.9 CHECKLIST FOR CHAPTER 11 -- PCB WASTE ACTIVITY NOTIFICATION

The following checklist allows PCB managers to determine how well they are complying with TSCA PCB notification regulations. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of non-compliance. If the particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Have all notification requirements of other applicable Federal regulations been met?	_____	_____	_____
General	If any state regulations exist that require notification of PCB activities, have you complied with these state regulations?	_____	_____	_____
General	Do you refuse to receive regulated PCB waste from a facility without an associated EPA identification number?	_____	_____	_____
General	Do you notify EPA of any plans to change PCB waste handling activities (i.e., changes in status)?	_____	_____	_____
A	If you do not own or operate a PCB storage facility subject to 40 CFR 761.65(b) or 40 CFR 761.65(c)(7), are you using "40 CFR Part 761" or a previously issued EPA identification number as your EPA identification number on all manifests, records, and reports?	_____	_____	_____

Continued on next page

Module	1 Yes	2 No	3 N/A
B Did you notify EPA and receive an identification number before operating a PCB storage facility subject to 40 CFR 761.65(b) or 40 CFR 761.65(c)(7)?	_____	_____	_____
B If you own or operate more than one PCB storage facility subject to 40 CFR 761.65(b) or 40 CFR 761.65(c)(7), did you submit a separate notification to EPA for each storage facility not located on the same property?	_____	_____	_____
B Did you notify EPA that you were planning to store ≥ 500 gallons of PCB wastes generated by a non-DOE facility and receive an EPA identification number before beginning commercial storage activities?	_____	_____	_____
C Did you notify EPA of your PCB waste transport activities and receive an EPA identification number from EPA before beginning transport activities?	_____	_____	_____
D Did you notify EPA that you were planning to dispose of PCB wastes and receive an EPA identification number before beginning PCB waste disposal activities?	_____	_____	_____
D Have you received an EPA identification number for each of your disposal facilities or mobile disposal units?	_____	_____	_____

For all applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 12

SPILL REPORTING AND CLEANUP

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12.1 INTRODUCTION

EPA established regulations for the reporting and cleanup of spills resulting from the release of any quantity of materials containing PCBs at concentrations of ≥ 50 ppm [52 *Federal Register* 10688] to assure that cleanup is adequate to prevent unreasonable risk to human health and the environment. This section of the TSCA regulations is codified at Subpart G of 40 CFR Part 761, the PCB Spill Cleanup Policy. *DOE Personnel should note that the TSCA Spill Cleanup Policy may not require reporting for spills of very small quantities of PCBs, but cleanup is always required.*

According to 40 CFR 761.123, "spill" means both intentional and unintentional spills, leaks, and other uncontrolled discharges of PCBs at concentrations of ≥ 50 ppm, where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. *The definitions of PCB leaks and spills have a subtle but significant difference. Leaks become a PCB spill when the leak of PCBs is running off or about to run off the external surface of the PCB source. This fine-line distinction determines when the full requirements of the PCB Spill Cleanup Policy would apply.*

This chapter covers the notification, cleanup, decontamination verification, and recordkeeping required by Federal regulations for spills and leaks of PCBs. In addition, additional procedures for reporting and cleanup of PCB Transformers that have been involved in a fire-related incident are discussed. *See also the EH-231 guidance memorandum titled "Remedial Actions at DOE Environmental Restoration Sites Contaminated with Polychlorinated Biphenyls (PCBs)" (USDOE 1992).*

DOE Personnel should follow this guidance immediately upon discovering or learning of a spill or leak of PCBs or untested mineral oil; many requirements must be met within hours of the discovery of a spill or leak.

DOE Personnel should be prepared for the possibility of a spill or leak of PCBs and should be thoroughly familiar with the requirements described in this chapter. PCB managers can help prepare themselves by compiling a checklist of the authorities they would need to notify and other mitigating or cleanup steps they would need to take.

12.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained up front because they should be considered concurrently with the remainder of the requirements in this chapter.

12.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Double wash/rinse,
- High-contact industrial surface,
- Impervious solid surface,
- Nonimpervious solid surface,
- Nonrestricted access area,
- Other restricted access location,
- Outdoor electrical substation,
- Residential/commercial area,
- Responsible party,
- Spill area,
- Spill boundaries, and
- Standard wipe test.

When confronted with an unfamiliar term, consult the Glossary.

12.2.2 SPILL NOTIFICATION REQUIREMENTS

Release reporting is often required within hours of the discovery of a PCB spill. The following box explains the reports that must be made to comply with statutes other than TSCA.

Clarification

Spill and Leak Reporting

As soon as the person in charge of a facility or vessel (i.e., the responsible party) has knowledge of a release of ≥ 1 pound of PCBs by weight over a 24-hour period, it must be reported immediately to the National Response Center at the following phone number [40 CFR 302.6]:

National Response Center: 1-800-424-8802

If the spill of ≥ 1 pound of PCBs by weight will result in PCB exposure to persons outside the boundaries of the facility, the spill must be reported to [40 CFR 355.40]:

- The community emergency coordinator for the local emergency planning committee (LEPC) of any area likely to be affected by the release;
- The State Emergency Response Commission (SERC) of any state likely to be affected by the release; and
- Where there is no LEPC, the relevant local emergency response personnel (e.g., the fire department).

DOE Order 5000.3A, "Occurrence Reporting and Processing of Operations Information," contains reporting requirements that vary across the DOE complex.

Reporting requirements under the Emergency Planning and Community Right-to-Know Act (EPCRA) also may apply. It is DOE's policy to comply with EPCRA requirements, although Federal agencies are not legally obligated to do so (see Chapter 14, "Other Regulatory Requirements").

Under TSCA, spills of 10 pounds of PCBs or more and all spills directly contaminating surface waters, sewers, drinking water supplies, grazing lands, or vegetable gardens must be

reported to the EPA Regional Office within 24 hours of discovery. These TSCA spill notification requirements are discussed within each module in this chapter. *Before a spill occurs, DOE Personnel should contact the applicable EPA Region(s) to determine Regional policy for TSCA spill reporting on weekends and holidays. The TSCA Hotline reports that some EPA Regions may have a spill hotline that is staffed on weekends and holidays (see Appendix E for the names and phone numbers of EPA Regional contacts).*

For further guidance regarding release reporting, see:

- "Guidance for Federal Facilities on Release Notification Requirements Under CERCLA and SARA Title III" (November 1990), EPA Document No. 9360.7-06, and
- "Federal Environmental Reporting Requirements Handbook" (May 1990), prepared by DOE's Office of Environmental Guidance (EH-231).

12.2.3 PCB TRANSFORMERS INVOLVED IN A FIRE-RELATED INCIDENT

A fire-related incident is defined as any incident involving a PCB Transformer and that involves the generation of sufficient heat and/or pressure (by any source) to result in the violent or non-violent rupture of a PCB Transformer and the release of PCBs [40 CFR 761.30(a)(1)(xi)].

If a PCB Transformer is involved in a fire-related incident, the owner of the transformer must immediately report the incident to the National Response Center (1-800-424-8802; in Washington, DC, 202-426-2675) [40 CFR 761.30(a)(1)(xi)]. In the event that a mineral oil transformer that is assumed to contain PCBs at a concentration of < 500 ppm is involved in a fire-related incident and is subsequently tested and discovered to contain PCBs at a concentration of ≥ 500 ppm, the owner must report the incident to the National Response Center immediately after this discovery [40 CFR 761.30(a)(1)(xv)].

Information must be provided to the National Response Center regarding the cause of the fire-related incident (e.g., a high or low current fault) and the type of PCB Transformer installation [40 CFR 761.30(a)(1)(xi)]:

- High or low secondary voltage network transformer,
- High or low secondary voltage simple radial system,
- Expanded radial system,
- Primary selective system,
- Primary loop system,
- Secondary selective system, or
- Other system.

As soon as is practically and safely possible, the owner of the PCB Transformer must also take the following measures and any other measures necessary to contain and control any potential releases of PCBs (and also incomplete combustion products) into water [40 CFR 761.30(a)(1)(xi)(A) - (C)]:

- All floor drains in the vicinity of the transformer must be blocked.
- Water runoff must be contained.
- Water used in any cleanup operations subsequent to the initial control of the fire must be controlled and treated prior to its release.

In addition to these requirements, any other spill cleanup requirements described in this chapter may apply to spills of PCBs resulting from a fire-related incident involving a PCB Transformer.

PCBs may be physically separated from water used in cleanup operations subsequent to a PCB Transformer fire without separate approval. The organic phase of the water must be disposed of as a PCB liquid according to its PCB concentration (see Chapter 9, "Disposal"). The aqueous phase must be filtered to remove any residual PCBs (e.g., by using activated carbon), and the filter medium must be disposed of as PCB solids in accordance with its PCB concentration (see Chapter 9, "Disposal"). The filtered water must be disposed of in accordance with a National Pollutant Discharge Elimination System (NPDES) permit granted under the Clean Water Act (CWA) (USEPA 1983).

12.2.4 IMPROPER DISPOSAL

Because a spill of material containing a PCB concentration of ≥ 50 ppm is considered improper PCB disposal [40 CFR 761.135(a)], all spilled PCB materials are wastes and are regulated by TSCA as such.

12.2.5 SPILL CONCENTRATION

Where the spill is being cleaned up solely under TSCA authorities, the PCB concentration of spilled and contaminated material is determined by the PCB concentration in the material spilled, rather than the PCB concentration in the material onto which the PCBs were spilled [40 CFR 761.123]; therefore, all contaminated materials must be handled as if they had the same PCB concentration as the material spilled. This provision is consistent with the provision at 40 CFR 761.1(b) that prohibits the dilution of PCBs (see Section 2.4).

Where a spill of untested mineral oil occurs, the oil is presumed to contain PCBs at a concentration of ≥ 50 ppm, but < 500 ppm [40 CFR 761.123].

Regulatory Issue

Disposal of Remediation Wastes

EPA may consider allowing remediation wastes (e.g., material removed from disposal sites, and debris or other material generated as the result of a spill cleanup or other remedial activity) to be managed and disposed of based on their "as found" concentrations and site-specific exposure. This approach would be a significant departure from EPA's current approach of managing these wastes according to the PCB concentration in the material spilled.

In addition, EPA may consider other options for disposal of remediation wastes, which may include:

- Disposal based on case-by-case risk assessment, and
- Disposal in accordance with existing Federal or state permitting or other waste management decision documents regarding the waste.

12.2.6 ENFORCEMENT

The TSCA PCB Spill Cleanup Policy (see Section 12.1) establishes requirements that EPA considers will result in adequate cleanup of spilled PCBs. When the procedural and numerical requirements of this policy are met, EPA assumes there is no need to assess penalties or to require further cleanup.

Although the Spill Cleanup Policy requires certain immediate actions, which are described in the modules of this chapter, EPA does not place a time limit on the completion or the cleanup effort, since time required for cleanup will vary from case to case. However, EPA expects decontamination to be achieved promptly in all cases and will consider promptness in deciding whether the responsible party made good faith efforts to clean up the spill in accordance with the PCB Spill Cleanup Policy [40 CFR 761.125(c)(i)(vi)].

EPA has reserved the right to seek penalties where it is determined that the responsible party has not made a good faith effort to comply with all provisions of the policy. EPA has also reserved the right to assess civil or criminal penalties in instances where the spill was allegedly the result of gross negligence or knowing violation. *(There is some uncertainty regarding whether EPA may impose civil penalties against another Federal agency under TSCA.)*

In addition, EPA may require additional cleanup where, upon review of the records of cleanup or EPA sampling following cleanup, it is discovered that the decontamination levels in the policy were not achieved.

12.2.7 MORE OR LESS STRINGENT CLEANUP MAY BE REQUIRED

Under 40 CFR 761.135, for spills subject to the TSCA Spill Cleanup Policy, EPA retains the authority to require additional cleanup upon finding that, despite good faith efforts by the responsible party, the numerical decontamination levels established in the policy have not been met. In addition, EPA recognizes that certain spills may warrant additional cleanup to more stringent numerical decontamination levels than are required by 40 CFR Part 761 for the purpose of addressing additional routes of exposure or significantly greater exposures than those which EPA assumed in developing the final cleanup standards of 40 CFR Part 761 [40 CFR 761.120(b)].

There may also be exceptional spill situations that require less stringent cleanup or a different approach to cleanup because of factors associated with the particular spill. These factors may mitigate expected exposures and risks or make cleanup to these requirements impracticable [40 CFR 761.120(a)(4)]. EPA retains the flexibility to allow less stringent or alternative decontamination measures based upon site-specific considerations [40 CFR 761.120(c)].

12.2.8 MATERIALS DECONTAMINATED PURSUANT TO THE TSCA SPILL CLEANUP POLICY

The TSCA Spill Cleanup Policy reaffirms EPA's longstanding policy to allow the continued use, processing, and distribution in commerce of any equipment, structures, and other materials contaminated with residual PCBs (i.e., PCBs that remain after proper cleanup of a spill or leak). These materials may be used provided that [53 *Federal Register* 24216]:

- They were decontaminated in accordance with applicable PCB cleanup policies in effect at the time, or
- If not previously decontaminated, they are decontaminated at the time of distribution in commerce in accordance with applicable PCB cleanup policies.

12.2.9 STATE REGULATIONS

The state in which the spill occurred may have additional regulations that apply to spills of PCBs in concentrations or circumstances that are not Federally regulated. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

EPA's Office of Toxic Substances conducted a telephone survey of the PCB programs and activities of all fifty states, the District of Columbia, Puerto Rico, and the Virgin Islands in September and October 1990. The results of this survey are compiled in a report, "Summary of State PCB Management Programs," available at no cost from the TSCA Hotline (202-554-1404). Appendix A of this guidance manual contains a table summarizing a portion of the state requirements as discussed in the survey report.

12.2.10 OTHER REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environmental Guidance (EH-23) for instructions on how to proceed. EH-23 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

EPA is in the process of addressing several conflicts between the TSCA regulations and requirements that apply to radioactive materials. For example, DOE has brought to EPA's attention that compliance with the TSCA storage container requirements for PCB wastes may conflict with concerns over the criticality issue associated with PCB wastes contaminated with radioactive material. Refer to the shaded boxes throughout this guidance for information on changes to the TSCA regulations currently under consideration by EPA.

Caution

Worker Protection

The Occupational Safety and Health Administration (OSHA) Worker protection standards for Hazardous Waste Operations and Emergency Response (HAZWOPER) apply to most cleanup and emergency response situations. HAZWOPER also requires the use of personal protective equipment (PPE) to minimize human contact. Refer to Section 14.3 for more information.

12.2.11 THE CONTEXT OF A PCB SPILL

The modules in this chapter cover the requirements of the TSCA Spill Cleanup Policy. This policy establishes criteria EPA will use to determine the adequacy of spill cleanups resulting from the release of materials containing PCBs at concentrations of ≥ 50 ppm. It applies to spills that occur after May 4, 1987. The TSCA Spill Cleanup Policy was designed for routine electrical equipment-type spills; for example, a leak from a PCB Transformer that contaminates the exterior surface of the transformer and nearby soil.

PCB spills may also be subject to reporting and cleanup requirements of other regulations. TSCA does not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)]. To determine what other regulatory requirements may apply, it is important to examine the context of a PCB spill. To assist you in this effort, a series of questions is presented to help in developing an understanding of a spill's context and thus in identifying other applicable requirements:

■ **Where did the spill occur?**

PCB spills can occur in a wide range of locations, e.g., within a TSCA PCB storage facility, at an outdoor PCB Transformer location, or on a public road as the result of a transportation accident. The TSCA Spill Cleanup Policy applies to PCB spills regardless of where they occur. However, the specific location of the spill will determine whether other regulations also apply. For example, if the spilled PCBs were released to the environment (e.g., from a leaking outdoor PCB Transformer) in a quantity at least equal to the Reportable Quantity for PCBs (i.e., ≥ 1 pound by weight over 24-hour period), CERCLA requires that the National Response Center must be contacted [40 CFR 302.6(a)]. Notification of the National Response Center is also required if the released PCBs reach any surface water body regulated by the Clean Water Act [40 CFR 110.11]. Additional reporting requirements are discussed in a DOE publication "Guidance on Federal Environmental Reporting Requirements" published by the Office of Environmental Guidance (EH-231).

■ **Does the spilled PCB material contain other regulated materials?**

The presence of other regulated materials in the PCB material may trigger the reporting and cleanup requirements of other statutes. For example, PCBs mixed with or containing RCRA hazardous waste may be subject to the spill reporting and cleanup requirements of both TSCA and RCRA. In such situations, all of the requirements of both statutes must be complied with. For example, a spill of hazardous waste (containing PCBs) in a RCRA-regulated container storage area may trigger the implementation of emergency procedures described at 40 CFR 264.56. The TSCA spill reporting requirements, described in this chapter, must also be completed. In this example, the regulatory requirements of TSCA and RCRA supplement each other. In other cases, they may contradict. For instance, following the above example further, under RCRA, spill cleanup must be initiated within a timely manner to prevent overflow of the collection system [40 CFR 264.175(5)]. In contrast, TSCA requires initiation of cleanup within 24 hours after the spill is discovered [40 CFR 761.125(a)(1)(iii)]. The TSCA requirement is more stringent. Thus, it takes precedence.

■ **Is the PCB spill part of a CERCLA remedial action or RCRA corrective action cleanup?**

Many DOE facilities are undergoing cleanup of past PCB spills as part of a CERCLA remedial action or RCRA corrective action. CERCLA requires a cleanup be consistent with other laws and regulations. Thus, remedies must comply with the applicable or relevant and appropriate requirements (ARARs) of Federal and state laws. The principal ARARs applicable to PCB contamination at a CERCLA site derive from the TSCA PCB regulations and the RCRA land disposal restriction program. Key points to remember include:

- The TSCA disposal requirements (see Chapter 9, "Disposal") will apply to PCB waste at the site. In selecting response action strategies and cleanup levels under CERCLA, EPA evaluates the form and concentration of the PCB contamination "as found" at the site and disposes of it in accordance with the requirements of 40 CFR 761.60(a)(2) through (5). This policy is described in an EPA publication entitled, "Fact Sheet: Polychlorinated Biphenyls (PCBs) Disposal Notices" (USEPA 1990) available from the Superfund/RCRA Hotline (1-800-424-9346). However, once the remedial action is started, the TSCA anti-dilution provisions apply; that is, dilution of the PCB waste to avoid the TSCA disposal requirements is prohibited.
- PCBs stored as part of CERCLA action should be stored in a facility that meets the facility specifications at 40 CFR 761.65(b)(1) (see Chapter 7, "Storage").
- PCB waste that is mixed with or contained in RCRA hazardous waste may be subject to the RCRA land disposal restrictions. PCBs are one of the constituents addressed by land disposal restrictions under the California List waste (see Chapter 9, "Disposal").
- Where PCBs affect groundwater, the Safe Drinking Water Act may provide potential ARARs for establishing cleanup standards. The Maximum Contaminant Level (MCL) for PCBs is 0.5 ppb.
- Where PCBs affect surface water, the Clean Water Act may provide potential ARARs for establishing cleanup standards. The ambient water quality criteria level of concern for PCBs is set at 0.000079 ppb.

EPA's Office of Emergency and Remedial Response issued a directive providing guidance on PCB contamination at CERCLA sites undergoing remedial actions (USEPA 1990b). This directive provides a general framework for determining cleanup levels, identifying treatment options, and assessing necessary management controls for residuals.

Clarification

RCRA Subpart S **Corrective Action Management Units and Temporary Units**

On February 16, 1993, EPA issued a final rule under RCRA establishing a comprehensive regulatory framework for taking corrective action at RCRA treatment,

Continued on next page

storage, and disposal facilities (TSDFs) [58 *Federal Register* 8658]. This rule is codified at 40 CFR Part 264, Subpart S. A key provision in this rule gives the EPA Regional Administrators and authorized states the authority, for purposes of implementing a site remedy, to (1) designate corrective action management units (CAMUs) for managing remediation wastes and (2) allow alternative design, operating, and closure standards for temporary waste management units (TUs) used for corrective actions. Any waste generated as part of a facility's corrective action and managed within a CAMU is not subject to the RCRA land disposal restrictions (LDRs). CAMUs and TUs may constitute applicable or relevant and appropriate requirements (ARARs) for remediating many CERCLA sites, as well. This rule could have broad implications for PCB remediation waste, such as contaminated soil, that is also regulated as a RCRA hazardous waste; however, certain limitations apply. For example, the CAMU/TU regulations are not applicable in states authorized for the existing Hazardous and Solid Waste Amendments (HSWA) corrective action program unless the state has adopted comparable provisions under state law. In addition, any more stringent state corrective action standards would apply. Refer to the final rule at 58 *Federal Register* 8658, February 16, 1993, for more information.

Regulatory Issue

Coordination of Requirements for Spill Remediation

EPA may be considering encouraging coordination of remedial activities with RCRA or CERCLA efforts, if possible, where remedial actions are not covered under the PCB Spill Cleanup Policy at Subpart G of 40 CFR Part 761. For example, for CERCLA sites where there is PCB contamination, the target standards described in the EPA guidance document "Guidance on Remedial Actions at Superfund Sites With PCB Contamination" (USEPA 1990c) would provide a baseline for EPA Regional decisions regarding cleanup, although EPA acknowledges that the guidance would not cover every contamination scenario. Similarly, if remediation is taking place at a solid waste management unit under RCRA, the RCRA target standards would apply, once they are promulgated. EPA has proposed RCRA target standards for corrective action at Subpart S of 40 CFR Part 264. The proposed rule published in the *Federal Register* on July 27, 1990 [55 *Federal Register* 30798] provides more information on these target standards.

12.2.12 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

12.3 MASTER FLOW CHART: SPILL REPORTING AND CLEANUP

The flow chart and the supplemental information on the following pages will help you identify the TSCA requirements for reporting and cleaning up PCB spills.

MASTER FLOW CHART: SPILL REPORTING AND CLEANUP
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: SPILL REPORTING AND CLEANUP

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with a RCRA hazardous waste?
5. Is the PCB material mixed with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers the spill reporting and cleanup requirements for spills and leaks of PCBs.

Step 1 Before proceeding further, you should be thoroughly familiar with Section 12.2, "General Requirements and Considerations," which contains information about the requirements that could apply to the cleanup of any known or suspected PCB spill. This section includes information about spill notification requirements under environmental laws other than TSCA, as well as the procedures for cleanup of PCBs when conducted as part of a more comprehensive CERCLA or RCRA corrective action project.

Clarification

What is a "Spill"?

According to 40 CFR 761.123, "spill" means intentional and unintentional:

- Spills,
- Leaks, or
- Other uncontrolled discharges (e.g., a release of PCBs as the result of an explosion or fire involving a PCB Transformer)

of PCBs at concentrations of ≥ 50 ppm, where the release results in any quantity of PCBs running off or about to run off the external surface of equipment or other PCB source, as well as the contamination resulting from those releases. *Note that this definition of PCB spills includes PCBs on the external surface(s) of PCB Items, even if the PCB Items would not otherwise be regulated (e.g., leaking PCB Small Capacitors). In addition, the spill need not have occurred recently to be considered a spill for regulatory purposes.*

Step 2 **What is the PCB concentration?** This chapter applies to the cleanup of spills or leaks of any quantity of PCBs with concentrations of ≥ 50 ppm. Concentration is determined by the PCB concentration in the material spilled rather than the PCB concentration in the material onto which the PCBs were spilled [40 CFR 761.123]; therefore, all contaminated materials must be handled as if they had the same PCB concentration as the material spilled. *This provision is consistent with the anti-dilution provision at 40 CFR 761.1(b), which prohibits the dilution of PCB material.*

Where a spill of untested mineral oil occurs, the oil is presumed to contain a PCB concentration of ≥ 50 ppm but < 500 ppm [40 CFR 761.123]. *Other assumptions must also be made about the concentration of PCBs in some types of equipment if the concentration of PCBs in the material spilled is unknown. Refer to Section 2.4.1 for details.*

Step 3 **When did the spill occur?** Spills that occurred prior to May 4, 1987, are considered old spills and are excluded from the scope of the TSCA PCB Spill Cleanup Policy. Requirements that apply to old spills are discussed in Module 12B; for spills that occurred after May 4, 1987, proceed to Step 4.

Step 4 **Is the spill excluded from the final numerical cleanup standards?** The TSCA regulations exclude from the final numerical cleanup standards spills that result in the following [40 CFR 761.120(d)]:

- Direct contamination of surface waters;
- Direct contamination of sewers or sewage treatment systems;
- Direct contamination of any private or public drinking water sources or distribution systems;
- Migration to and contamination of surface waters, sewers, or drinking water supplies before cleanup has been completed in accordance with the TSCA regulations described in this manual;
- Contamination of animal grazing lands; and
- Contamination of vegetable gardens.

Note that the term "surface water" includes, but is not limited to, "waters of the United States" as defined in 40 CFR 122.2.

For guidance on spills excluded from the final numerical cleanup standards, go to Module 12C; otherwise, proceed to Step 5.

Step 5 **What is the PCB concentration of the spilled material?** High-concentration spills (i.e., spills of materials with a PCB concentration of ≥ 500 ppm) are subject to the cleanup requirements described in Module 12D. If the PCB concentration of the material spilled is < 500 ppm, continue to Step 6.

Step 6 **How much was spilled (by weight of PCBs)?** Spills of ≥ 1 pound low-concentration PCBs (i.e., PCBs with a concentration of < 500 ppm) or ≥ 270 gallons of untested mineral oil must be addressed according to the requirements described in Module 12D. Spills of < 1 pound low-concentration PCBs or < 270 gallons of untested mineral oil are subject to the requirements described in Module 12E.

12.4 MODULE 12A: SPILLS OF < 50 ppm PCBs

To ensure that you are in the correct module, the box below provides a reminder of the decision path you should have taken in the Master Flow Chart in Section 12.3 to arrive at Module 12A.

Reminder

Spilled PCBs → < 50 ppm → Module 12A

The Federal TSCA PCB Spill Cleanup Policy does not regulate the cleanup of spills resulting from the release of materials containing PCBs at concentrations of < 50 ppm [53 *Federal Register* 24217].

It is important to note that the Anti-dilution Rule applies to spilled PCBs and PCB materials contaminated by a spill. As a result, the PCB concentration of contaminated materials is determined by the PCB concentration in the material that was spilled, opposed to the concentration of PCBs in the material into which the PCBs were spilled [40 CFR 761.123]. Where a spill of untested mineral oil occurs, the oil is presumed to contain PCBs at a concentration of ≥ 50 ppm but < 500 ppm and is subject to all of the relevant TSCA requirements [40 CFR 761.123].

Although spills of PCBs at a concentration of < 50 ppm are not regulated by TSCA (unless the source of the PCB spill had a PCB concentration of < 50 ppm as the result of dilution), cleanup standards or requirements for the reporting of spills may be imposed under other Federal statutory authorities, including but not limited to the [40 CFR 761.120(e)(1)]:

- Clean Water Act;
- Resource Conservation and Recovery Act; and
- Comprehensive Environmental Response, Compensation, and Liability Act.

All of the requirements of the applicable Federal regulations must be met. Where a conflict between requirements arise, consult Section 12.2.10. In addition, such releases could trigger a variety of reporting and cleanup requirements under state laws and regulations, as discussed in Section 12.2, "General Requirements and Considerations." *PCB managers*

should consider potential CERCLA liability when determining how to remediate spills of PCBs with concentrations of < 50 ppm.

12.5 MODULE 12B: SPILLS THAT OCCURRED BEFORE MAY 4, 1987

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 12.3 to arrive at Module 12B.

Reminder

Spilled PCBs $\rightarrow \geq 50$ ppm $\rightarrow$ Occurred before 5/4/87 $\rightarrow$ Module 12B

Spills that occurred before May 4, 1987, the effective date of the TSCA PCB Spill Cleanup Policy, are considered "old spills." EPA determined that old spills require site-by-site evaluation for the following reasons [52 *Federal Register* 10688]:

- There is a greater likelihood that the site involves more pervasive PCB contamination than fresh spills.
- Old spills are generally more difficult to clean up than fresh spills, particularly on porous surfaces such as concrete.
- It is not EPA's intention to require additional cleanup under the PCB Spill Cleanup Policy if the spill has already been addressed in accordance with requirements imposed by EPA through its Regional offices.
- EPA did not want new spill regulations (i.e., the PCB Spill Cleanup Policy) to interfere with ongoing litigation of enforcement actions where PCB spill cleanup is an issue.

As a result, old spills are excluded from the scope of the TSCA PCB Spill Cleanup Policy. Old spills must be decontaminated to requirements established at EPA's discretion. EPA Regions usually determine the cleanup requirements for old spills. *PCB managers should be aware that requirements under other Federal statutory authorities, including but not limited to RCRA, CERCLA, and the CWA, also may apply to old spills. In addition, the state may require remedial actions.*

There are no TSCA regulations that require that EPA be notified of the discovery of an old spill. *However, if no remedial action has been taken to address an old spill, PCB*

managers should contact the appropriate EPA Region for guidance. The EPA Region should be notified immediately of the discovery of any old spill of PCBs.

Because of the Anti-dilution Rule (Section 2.4.2), remediation wastes generated by the cleanup of PCB spills must be disposed of according to the PCB concentration of material spilled, if known. Refer to Chapter 9, "Disposal," for further guidance.

Regulatory Issue

EPA's Approach to Remediate Old Spills

EPA may consider establishing a standard approach to remediating old spills. Several options that could be evaluated include:

- Setting specific standards,
- Using a uniform decision-making process with target standards but allowing site-specific variances, or
- Using a uniform decision-making process with a general goal and site-specific application.

Clarification

PCB Spills and Disposal in Landfills **Prior to the TSCA PCB Disposal Regulations**

Before February 17, 1978, the disposal of PCBs was not regulated. In addition, spills containing PCBs at concentrations of ≥ 50 ppm were not considered improper PCB disposal.

This box describes how EPA regulates PCBs and PCB Items that were spilled or disposed of in landfills prior to the implementation of the TSCA PCB disposal regulations at 40 CFR 761.60 on February 17, 1978 [43 *Federal Register* 7150]. Four

Continued on the next page

key topics relating to PCBs and PCB Items disposed of in landfills or spilled prior to February 17, 1978, are discussed below:

- 1) **How are soils and other materials contaminated with PCBs as a result of PCB disposal in a landfill prior to February 17, 1978, regulated? Is the disposal site now considered an uncontrolled discharge of PCBs (i.e., a spill)?**

PCBs and PCB Items that were disposed of in a landfill prior to February 17, 1978, are not required to be excavated and disposed of in accordance with 40 CFR 761.60. The TSCA disposal requirements at 40 CFR 761.60 become applicable only when PCBs and PCB Items are removed from service for disposal. In order to exempt these PCBs and PCB Items from the TSCA disposal requirements, EPA added a provision to the disposal regulations granting PCBs and PCB Items landfilled prior to February 17, 1978, "in service" status (i.e., they are not considered waste requiring disposal).

The effect of this "in service" exemption is that PCBs and PCB Items that were landfilled prior to February 17, 1978, are not required to be removed from the landfill and disposed of in compliance with the TSCA regulations at 40 CFR 761.60. However, if PCBs or PCB Items landfilled prior to February 17, 1978, are removed from the disposal site, then they lose their "in service" status and must be disposed of in accordance with 40 CFR 761.60. *In addition, CERCLA requirements may apply if the facility is remediated under CERCLA authority.*

- 2) **When does the "in service" exemption for PCBs and PCB Items landfilled before February 17, 1978, apply?**

PCBs and PCB Items (e.g., contaminated soil) qualify for the "in service" exemption if:

- The PCB material is in a "disposal site," and
- It was disposed of in the "disposal site" prior to February 17, 1978.

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In TSCA Appeal No. 87-4 (Standard Scrap Metal Company, respondent), the Administrator of the EPA found that the term "disposal site" is limited to landfills. In addition, the Administrator ruled that the burden of claiming the "in service" exemption and showing that the PCBs were deposited in the soil prior to February 17, 1978, is upon the regulated facility. The regulated facility also has the burden of proving that there is no possibility that discharges to the soil occurred after February 17, 1978 (Std. Scrap 1990).

If the contaminated soil does not qualify for the "in service" exemption, it must be disposed of as if it were an "old spill." The TSCA requirements for addressing old spills are discussed in this module.

3) What are the TSCA regulations that apply to soil that was contaminated by PCBs as the result of a spill that occurred before February 17, 1978?

While an uncontrolled discharge (i.e., spill) constitutes disposal [40 CFR 761.60(d)], the site of the uncontrolled discharge is not necessarily a "disposal site." In TSCA Appeal No. 87-4 (Standard Scrap Metal Company, respondent), the Administrator found that EPA never intended to confer "in service" status on spill sites. "In service" status is conferred only on PCB-contaminated soil and debris that have been placed in a disposal site (i.e., a landfill) [43 *Federal Register* 33918]. Therefore, pre-1978 spill sites are regulated as "old spills."

12.6 MODULE 12C: SPILLS EXCLUDED FROM THE NUMERICAL CLEANUP STANDARDS

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 12.3 to arrive at Module 12C.

Reminder

Spilled PCBs → ≥ 50 ppm → Occurred after 5/4/87 → Excluded spills → Module 12C

The TSCA regulations exclude from the final numerical cleanup standards of the TSCA PCB Spill Cleanup Policy spills that result in the following [40 CFR 761.120(d)]:

- Direct contamination of surface waters;
- Direct contamination of sewers or sewage treatment systems;
- Direct contamination of any private or public drinking water sources or distribution systems;
- Migration to and contamination of surface waters, sewers, or drinking water supplies before cleanup has been completed in accordance with the TSCA regulations described in this manual;
- Contamination of animal grazing lands; and
- Contamination of vegetable gardens.

Because these excluded spill situations involve significant factors that may not be adequately addressed by the cleanup standards (which are based on typical spill characteristics), EPA determines the final cleanup standards for these spills at the Regional level on a site-specific basis. Nevertheless, notification may be required, and all excluded spills are subject to certain immediate actions to contain the area of contamination. In addition, TSCA requirements for the disposal of contaminated materials apply.

Clarification

Definition of "Surface Waters"

Surface waters include, but are not limited to, "waters of the United States" as defined at 40 CFR 122.2. According to this definition, surface waters may include:

- Interstate waters;
- Waters subject to the ebb and flow of the tide;
- Interstate wetlands;
- Intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, play lakes, or natural ponds;
- Tributaries of other waters of the United States;
- The territorial sea; and
- Wetlands adjacent to waters of the United States.

It is important to consult the regulations at 40 CFR 122.2 for a complete definition of "waters of the United States." This term involves complexities that are beyond the scope of this manual.

Surface waters can also include arroyos that are dry most of the year.

The requirements for spills excluded from the numerical cleanup standards are discussed in the following sections of this module:

- Section 12.6.1 - Notification,
- Section 12.6.2 - Immediate Requirements, and
- Section 12.6.3 - Disposal of Contaminated Materials.

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MODULE 12C
12.6.1 Notification

SUPPLEMENTAL INFORMATION FOR SECTION 12.6.1, NOTIFICATION

- Step 1** **Start** – These notification requirements apply to spills excluded from the numerical cleanup standards of the TSCA PCB Spill Cleanup Policy.
- Step 2** The responsible party must notify the appropriate EPA Regional Office (Office of Pesticides and Toxic Substances Branch) not later than 24 hours after discovery (see Appendix E for Regional office phone numbers). In addition, the responsible party is subject to all reporting requirements under other statutes such as the Clean Water Act and SARA Title III [40 CFR 761.125(a)(1)]. It is DOE's policy to comply with SARA Title III requirements, although Federal agencies are not legally obligated to do so.
- Before a spill occurs, DOE Personnel should contact the applicable EPA Region(s) to determine Regional policy for TSCA spill reporting on weekends and holidays. The TSCA Hotline reports that some EPA Regions have a spill hotline that is staffed on weekends and holidays.*
- Step 3** **How much was spilled (by weight of PCBs)?** If < 1 pound of PCBs by weight is known or suspected to have spilled, proceed to Step 3A; otherwise, go to Step 3B.
- Step 3A** Spills of < 1 pound of PCBs are not required to be reported to the National Response Center.
- Step 3B** The responsible party, as soon as he or she has knowledge of a spill or leak of ≥1 pound of PCBs (the reportable quantity (RQ) under CERCLA) in any 24-hour period, must immediately report the release to the National Response Center (1-800-424-8802; in Washington, DC 202-426-2675) [40 CFR 302.6].

MODULE 12C
12.6.2 Immediate Requirements

SUPPLEMENTAL INFORMATION FOR SECTION 12.6.2, IMMEDIATE REQUIREMENTS

Step 1 **Start** — The following immediate requirements apply to spills excluded from the numerical cleanup standards of the TSCA PCB Spill Cleanup Policy.

Clarification

Effect of Emergency or Adverse Weather Conditions

Completion of cleanup (Step 3A) or restriction of the spill area, documentation of the spill, and initiation of removal actions (Step 4A) may be delayed beyond the time limits specified in case of circumstances that include, but are not limited to [40 CFR 761.125(b)(2) and (c)(1)]:

- Civil emergency,
- Adverse weather conditions (e.g., hurricane or tornado),
- Lack of access to the site, or
- Emergency operating conditions.

The cleanup must not be delayed because the spill occurred on a weekend or involves overtime costs. Owners of spilled PCBs who have delayed cleanup because of the types of circumstances listed above must keep records documenting the fact that circumstances precluded rapid response. Completion of cleanup may be delayed for only the duration of the adverse conditions.

Step 2 **What did the spill contaminate?** Spills excluded from the numerical cleanup standards specified in the TSCA regulations at 40 CFR 761.125 are nevertheless subject to immediate measures to contain and decontaminate the spill area. These immediate requirements are different for spills that contaminate surface water, sewers, or drinking water (go to Step 2A) and those that contaminate grazing lands or vegetable gardens (go to Step 2B).

Step 2A Where a spill directly contaminates surface water, sewers, or drinking water supplies, the responsible party must obtain guidance from the appropriate EPA Regional Office (Pesticides and Toxic Substances Branch) for appropriate cleanup measures in the shortest possible time, but in no case later than 24 hours after discovery (see Appendix E for Regional office phone numbers) [40 CFR 761.125(a)(1)(i)]. *Before a spill occurs, DOE Personnel should contact the applicable EPA Region(s) to determine Regional policy for TSCA spill reporting on weekends and holidays. The TSCA Hotline reports that some EPA Regions have a spill hotline that is staffed on weekends and holidays.*

Step 2B Spills that directly contaminate grazing lands or vegetable gardens are subject to different requirements, depending on the concentration and quantity of the spill. The responsible party in either case must proceed to decontaminate the spill area in the shortest possible time, but in no case later than 24 hours after discovery [40 CFR 761.125(a)(1)(ii)]. Proceed to Step 3.

Step 3 **What type of spill is it?** Spill cleanup for the following types of spills must be carried out according to the instructions in Step 3A:

- Low-concentration spills (i.e., with a PCB concentration of < 500 ppm) that involve < 1 pound of PCBs by weight, or
- Low-concentration spills that involve < 270 gallons of untested mineral oil.

Spill cleanup for other types of spills, as listed below, must be conducted according to Step 4:

- All high-concentration spills (i.e., with a PCB concentration of $\geq$ 500 ppm);
- Low-concentration spills that involve $\geq$ 1 pound of PCBs by weight or
- Low-concentration spills that involve $\geq$ 270 gallons of untested mineral oil.

Step 3A For low-concentration spills that involve < 1 pound of PCBs by weight or < 270 gallons of untested mineral oil, the responsible party must **complete** the following decontamination requirements **within 48 hours** after he or she was notified or became aware of the spill [40 CFR 761.125(b)(1)]:

- Solid surfaces must be double washed/rinsed (see Glossary), except that all indoor, residential surfaces other than vault areas must be cleaned to 10 micrograms per 100 square centimeters by standard commercial wipe tests.
- All soil within the spill area (i.e., visible traces of soil and a buffer of 1 lateral foot around the visible traces) must be excavated, and the ground must be restored to its original configuration by back-filling with soil containing PCBs at a concentrations of < 1 ppm.

If adverse weather conditions or time lapse due to other emergency has left insufficient visible traces of the spill, the responsible party must use a statistically based sampling scheme to determine the spill boundaries [40 CFR 761.125(b)(2)].

Step 4 **Are there visible traces of the spill?** Visible traces of the spill allow the responsible party to quickly identify the spill area. Immediate requirements differ depending on whether the spill area can be visually identified (Step 4A) or whether it must be identified by statistical sampling of the suspected spill area (Step 4B). Immediate requirements must be **completed within no more than 24 hours** (or within 48 hours for PCB Transformers) after the responsible party was notified or became aware of the spill.

Step 4A If there are visible traces of the spill, the responsible party must [40 CFR 761.125(c)(1)(ii)-(iv)]:

- Effectively cordon off or otherwise delineate and restrict an area encompassing any visible traces of the spill plus a 3-foot buffer;
- Place clearly visible signs advising people to avoid the area;
- Record and document the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area; and
- Initiate cleanup of all visible traces of the fluid on hard surfaces, and initiate removal of all visible traces of the spill on soil and other media, such as gravel, sand, oyster shells, etc.

Step 4B If there are no visible traces, the responsible party must [40 CFR 761.125(c)(1)(v)]:

- Document the fact that there are no visible traces of the spill;
- Estimate (based on the amount of material missing from the equipment or container) the area of the spill and immediately cordon off the area of suspected contamination; and
- As soon as practicable, contact the EPA Regional Office for guidance in identifying the spill boundaries. A statistically based sampling scheme must be used.

12.6.3 DISPOSAL OF CONTAMINATED MATERIALS

All concentrated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under TSCA must be properly stored, labeled, and disposed of [40 CFR 761.125(a)(2)]. It is important to remember that any contaminated material must be considered to have the same PCB concentration as the material that was spilled, for the purposes of storage, marking, transport, disposal, and other activities regulated by TSCA. Chapters 6, 7, 8, and 9 of this manual contain instructions on how to properly mark, store, transport, and dispose of contaminated materials, respectively.

Because of the Anti-dilution Rule (Section 2.4.2), remediation wastes generated by the cleanup of PCB spills must be disposed of according to the PCB concentration of material spilled, if known. Refer to Chapter 9, "Disposal," for further guidance.

12.7 MODULE 12D: SPILLS OF HIGH-CONCENTRATION PCBs AND SPILLS OF ≥ 1 POUND OF LOW-CONCENTRATION PCBs

To ensure that you are in the correct module, the box below provides a reminder of the decision paths that you should have taken in the Master Flow Chart in Section 12.3 to arrive at Module 12D.

Reminder

Spilled PCBs $\rightarrow \geq 50$ ppm $\rightarrow$ Occurred after 5/4/87 $\rightarrow$ Not excluded $\rightarrow \geq 500$ ppm $\rightarrow$ Module 12D

Spilled PCBs $\rightarrow \geq 50$ ppm $\rightarrow$ Occurred after 5/4/87 $\rightarrow$ Not excluded $\rightarrow < 500$ ppm $\rightarrow$ Low-concentration spills of ≥ 1 pound PCBs or ≥ 270 gallons of untested mineral oil $\rightarrow$ Module 12D

This module discusses EPA's spill cleanup requirements for high-concentration spills (i.e., with a PCB concentration of ≥ 500 ppm) and low-concentration spills (i.e., with a PCB concentration of < 500 ppm) of ≥ 1 pound PCBs by weight or ≥ 270 gallons or more of untested mineral oil.

The following sections guide you through the process of identifying applicable requirements to ensure that you address the spill in accordance with the PCB spill cleanup regulations.

- Section 12.7.1 - Immediate Requirements,
- Section 12.7.2 - Spill Cleanup,
- Section 12.7.3 - Post-cleanup Sampling,
- Section 12.7.4 - Disposal of Contaminated Materials, and
- Section 12.7.5 - Recordkeeping.

MODULE 12D
12.7.1 Immediate Requirements

SUPPLEMENTAL INFORMATION FOR SECTION 12.7.1, IMMEDIATE REQUIREMENTS

Step 1 **Start** – The following immediate requirements apply to spills of high-concentration PCBs and low-concentration spills of ≥ 1 pound of PCBs by weight or ≥ 270 gallons of untested mineral oil.

Step 2 The responsible party, as soon as he or she has knowledge of a spill or leak of ≥ 1 pound of PCBs by weight (the reportable quantity [RQ] of PCBs under CERCLA) in any 24-hour period, must immediately report the release to the National Response Center (1-800-424-8802; in Washington DC, 202-426-2675). Reporting requirements under other statutes, such as the Clean Water Act or SARA Title III, may also apply. *It is DOE's policy to comply with SARA Title III requirements, although Federal agencies are not legally obligated to do so.* Proceed to Step 3.

Step 3 **How much was spilled (by weight of PCBs)?** Spill reporting requirements under TSCA differentiate between spills of ≥ 10 pounds (go to Step 3A) and < 10 pounds (go to Step 3B).

Step 3A The responsible party must notify the appropriate EPA Regional Office (Pesticides and Toxic Substances Branch) of spills of > 10 pounds PCBs by weight in the shortest possible time after discovery, but in no case later than 24 hours after discovery (see Appendix E for Regional office phone numbers) [40 CFR 761.125(a)(1)(iii)].

Before a spill occurs, DOE Personnel should contact the applicable EPA Region(s) to determine Regional policy for TSCA spill reporting on weekends and holidays. The TSCA Hotline reports that some EPA Regions have a spill hotline that is staffed on weekends and holidays. Proceed to Step 4.

Step 3B The responsible party is not required to notify the EPA Regional Office of spills of ≤ 10 pounds of PCBs under TSCA. *(However, the Regional Office may need to be contacted for guidance on identifying spill boundaries if Step 4B applies.)* Proceed to Step 4.

Step 4 **Are there visible traces of the spill?** Visible traces of the spill allow the responsible party to quickly identify the spill area. Immediate requirements differ depending on whether or not the spill area can be visually identified (Step 4A) or whether it must be identified by statistical sampling of the suspected spill area (Step 4B).

Step 4A If there are visible traces of the spill, **within 24 hours** (or within 48 hours for PCB Transformers) after being notified or becoming aware of the spill, the responsible party must [40 CFR 761.125(c)(1)(ii)-(iv)]:

- Effectively cordon off or otherwise delineate and restrict an area encompassing any visible traces of the spill plus a 3-foot buffer;
- Place clearly visible signs advising people to avoid the area;

- Record and document the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area; and
- Initiate cleanup of all visible traces of the fluid on hard surfaces (e.g., wood, asphalt, and concrete) and initiate removal of all visible traces of the spill on soil and other media, such as gravel, sand, oyster shells, etc. For more information on spill cleanup requirements, proceed to Section 12.7.2. *It is very important to clean porous surfaces (e.g., wood, concrete, asphalt) as soon as possible after a spill occurs to limit absorption of PCBs.*

Clarification

Effect of Emergency or Adverse Weather

The restriction of the spill area, documentation of the spill, and initiation of removal actions (Step 4A) may be delayed beyond 24 hours, if circumstances necessitate the delay [40 CFR 761.125(c)(1)]. These actions may be delayed for the duration of the adverse conditions, which include:

- Civil emergency,
- Adverse weather conditions (e.g., hurricane or tornado),
- Lack of access to the site, or
- Emergency operating conditions.

The cleanup must not be delayed because the spill occurred on a weekend or involves overtime costs. Owners of spilled PCBs who have delayed cleanup because of the types of circumstances listed above must keep records documenting the fact that circumstances precluded rapid response.

Step 4B If there are no visible traces, the responsible party must [40 CFR 761.125(c)(1)(v)]:

- Document the fact that there are no visible traces of the spill,
- Estimate (based on the amount of material missing from the equipment or container) the area of the spill and immediately cordon off the area of suspected contamination, and
- Identify the spill boundaries using a statistically based sampling scheme.

Contact the EPA Regional Office for guidance on identifying spill boundaries. For more information on spill cleanup requirements, proceed to Section 12.7.2.

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MODULE 12D
12.7.2 Spill Cleanup

SUPPLEMENTAL INFORMATION FOR SECTION 12.7.2, SPILL CLEANUP

Step 1 **Start** — The following spill cleanup requirements apply to high-concentration spills and low-concentration spills of ≥ 1 pound of PCBs by weight or ≥ 270 gallons of untested mineral oil.

Clarification

EPA Expects Prompt Decontamination

EPA has not placed a time limit on completion of the cleanup effort since the time required for completion will vary from case to case. However, EPA expects that decontamination will be achieved promptly in all cases and has stated its intent in 40 CFR 761.120 to consider promptness in determining whether the responsible party made good faith efforts to clean up the spill in accordance with the TSCA spill cleanup regulations [40 CFR 761.125(c)(1)(6)].

Step 2 **Where did the spill occur?** The TSCA Spill Cleanup Policy differentiates among spills that occur in outdoor electrical substations (Step 2A), other restricted access locations (Step 2B), and non-restricted areas (Step 2C). Refer to the Glossary for the regulatory definitions of these terms. *Note that non-restricted access areas include residential and commercial areas accessible to the general public or employees (e.g., all indoor areas). While DOE "badged" areas do not necessarily fit the definition of a commercial area, office areas within "badged" areas should be decontaminated as if they were residential/commercial areas.*

TSCA does not specify how materials are to be decontaminated to meet the numerical cleanup standards described in this section. Nonetheless, EPA has tested two cleaners that are widely used: a water-based industrial detergent (Penetone Power Cleaner 155) and an organic solvent (kerosene). Both cleaners were relatively effective in cleaning spills on steel (a non-porous surface). On porous surfaces, however, the detergent was not effective in reducing PCB concentration, and the solvent caused both the solvent and PCBs to be absorbed into the contaminated material. Overall, EPA found that the Penetone Power Cleaner was significantly less effective than the organic solvent in reducing the concentration of PCBs. EPA has received anecdotal information, however, which suggests that the detergent cleaner may be more effective on soiled surfaces, because of the tendency of PCBs to bind to dirt [52 *Federal Register* 10703].

Prior to cleanup, DOE Personnel should consider whether the solvent used to decontaminate TSCA spills would result in a mixture of PCBs and RCRA hazardous waste. Try to avoid solvents that will become RCRA hazardous waste. In addition, DOE Personnel could consult with the EPA Region for suggestions on the type of cleaner to use.

Outdoor electrical substations are defined as being located ≥ 0.1 kilometer from a residential/commercial area. If outdoor, fenced off, and restricted access areas used in the transmission and/or distribution of electrical power are located < 0.1 kilometer from a residential/commercial area, they are subject to the more stringent cleanup standards of residential/commercial areas (Step 2C). If an outdoor electrical substation is converted to another use, the spill site must be cleaned up to the requirements of a non-restricted area, as described in Step 2C.

Step 2A Spills that occur in outdoor electrical substations must be decontaminated as follows [40 CFR 761.125(c)(2)]:

- Contaminated solid surfaces (both impervious and non-impervious) must be cleaned to a PCB concentration of 100 micrograms per 100 square centimeters, as measured by standard wipe tests.
- Soil contaminated by the spill must be cleaned to PCB concentrations of either:
 - 25 ppm by weight, or
 - 50 ppm by weight, provided that a label or notice is visibly placed in the area.

If the responsible party can demonstrate that cleanup to 25 ppm or 50 ppm will jeopardize the integrity of the electrical equipment at the substation, the EPA Regional Office may establish an alternative cleanup method or level and place the responsible party on a reasonably timely schedule for completion of cleanup. Proceed to Section 12.7.3.

Step 2B Spills that occur in restricted-access locations other than outdoor electrical substations (i.e., areas located ≥ 0.1 kilometers from a residential/commercial area and limited by manmade or naturally occurring barriers) must be decontaminated. *Restricted access locations other than outdoor electrical substations are typically industrial facilities and extremely remote rural locations. Many DOE facilities would belong in this category.* The requirements for decontamination are as follows [40 CFR 761.125(c)(3)]:

- High-contact solid surfaces (see Glossary) must be cleaned to ≤ 10 micrograms per 100 square centimeters, as measured by standard wipe tests.
- Low-contact, indoor, impervious solid surfaces (see Glossary) must be decontaminated to ≤ 10 micrograms per 100 square centimeters.
- At the option of the responsible party, low-contact, indoor, nonimpervious surfaces must be cleaned either to:
 - ≤ 10 micrograms per 100 square centimeters, or
 - ≤ 100 micrograms per 100 square centimeters and encapsulated.

The EPA Regional Administrator retains the authority to disallow the encapsulation option for a particular spill situation if he or she determines that failure of the encapsulation would create an imminent hazard at the site.

- Low-contact, outdoor surfaces (both impervious and nonimpervious) must be cleaned to ≤ 100 micrograms per 100 square centimeters.
- Soil contaminated by the spill must be cleaned to ≤ 25 ppm PCBs by weight.

Proceed to Section 12.7.3.

Step 2C

Spills that occur in nonrestricted access locations (e.g., residential/commercial areas such as indoor locations and unrestricted access rural areas) must be decontaminated as follows [40 CFR 761.125(c)(4)]:

- Furnishings, toys, and other easily replaceable household items must be disposed of in accordance with the disposal regulations described in Chapter 9, "Disposal," and replaced by the responsible party.
- Indoor solid surfaces and high-contact, outdoor solid surfaces, defined as high-contact residential/commercial surfaces (see Glossary), must be cleaned to ≤ 10 micrograms per 100 square centimeters, as measured by standard wipe tests.
- Indoor vault areas and low-contact, outdoor, impervious solid surfaces must be decontaminated to ≤ 10 micrograms per 100 square centimeters.
- At the option of the responsible party, low-contact, outdoor, nonimpervious solid surfaces must be either:
 - Cleaned to ≤ 10 micrograms per 100 square centimeters, or
 - Cleaned to ≤ 100 micrograms per 100 square centimeters and encapsulated.

The EPA Regional Administrator retains the authority to disallow the encapsulation option for a particular spill situation if The Administrator determines that failure of the encapsulation would create an imminent hazard at the site.

- Soil contaminated by the spill must be decontaminated to ≤ 10 ppm PCBs by weight provided that soil is excavated to a minimum depth of 10 inches. The excavated soil must be replaced with soil containing less than 1 ppm PCBs, and the spill site must be restored (e.g., replacement of turf). Proceed to Section 12.7.3.

Regulatory Issue

Decontamination

EPA may be considering a general decontamination standard for any impervious surface that is not associated with food, animal feed, or drinking water. Any impervious surface that is decontaminated to the specified level could be disposed

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of or reused, as long as its use is not associated with food, feed, or drinking water. In some instances, EPA would require approval of the decontamination method. EPA has indicated, however, that this standard is achievable through a variety of techniques.

In addition, EPA may propose additional procedures for decontamination of unpainted impervious surfaces contaminated with mineral oil dielectric fluid that may be inaccessible for sampling purposes. The use of these procedures likely would not require confirmatory sampling.

12.7.3 POST-CLEANUP SAMPLING

Post-cleanup sampling is required to verify the level of cleanup under Section 12.7.2. The responsible party may use any statistically valid, reproducible sampling scheme (either random samples or grid samples), provided that the following requirements are satisfied [40 CFR 761.130]:

- The sampling area is the greater of:
 - An area equal to the area cleaned plus an additional 1-foot boundary, or
 - An area 20 percent larger than the original area of contamination.
- The sampling scheme must ensure 95% confidence against false positives.
- The number of samples (minimum 3 and maximum 40) must be sufficient to ensure that areas of contamination of a radius of 2 feet or more within the sampling area will be detected.
- The sampling scheme must include calculation for expected variability due to analytical error.

Clarification

EPA-Recommended Sampling Scheme

EPA recommends the use of a sampling scheme ("Verification of PCB Spill Cleanup by Sampling and Analysis") developed by the Midwest Research Institute (MRI) for use in EPA enforcement inspections (USEPA 1985). Guidance for the use of this sampling scheme is available in the MRI report "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup" (USEPA 1986).

Both the MRI sampling scheme and the guidance document are available from the TSCA Assistance Office, Environmental Protection Agency, Rm. E-543, 401 M St. SW., Washington, DC 20460 (202-554-1404). Another recommended document that is available from the same office is "Wipe Sampling and Double Wash/Rinse Cleanup as Recommended by the EPA PCB Spill Cleanup Policy."

The major advantage of this sampling scheme is that it is designed to characterize the degree of contamination within the entire sampling area with a high degree of confidence. At the same time, it uses fewer samples than any other grid or random sampling scheme. This sampling scheme also allows some sites to be characterized on the basis of composite samples.

Clarification

EPA May Sample to Confirm Cleanup

EPA may, at its discretion, take samples from any spill site. If EPA's sampling indicates that the remaining concentration level exceeds the required level, EPA will require further cleanup.

12.7.4 DISPOSAL OF CONTAMINATED MATERIALS

All contaminated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under TSCA must be properly stored, labeled, and disposed of [40 CFR 761.125(a)(2)]. It is important to remember that any contaminated material must be considered to have the same PCB concentration as the material that was spilled, for the

purposes of storage, marking, transport, disposal, and other activities regulated by TSCA. Chapters 6, 7, 8, and 9 of this manual contain instructions on how to properly mark, store, transport, and dispose of contaminated materials, respectively.

Because of the Anti-dilution Rule (Section 2.4.2), remediation wastes generated by the cleanup of PCB spills must be disposed of according to the PCB concentration of material spilled, if known. Refer to Chapter 9, "Disposal," for further guidance.

12.7.5 RECORDKEEPING

The responsible party must document the cleanup with records of decontamination. These records must be maintained for at least 5 years from the date of the spill and must include [40 CFR 761.125(c)(5)]:

- A description of the source of the spill (e.g., the type of equipment).
- Estimated or actual date and time of the spill occurrence.
- The date and time cleanup was completed or terminated. If cleanup was delayed by emergency or adverse weather, record the nature and duration of the delay.
- A brief description of the spill location and the nature of the materials contaminated. This information should include whether the spill occurred in an outdoor electrical substation, other restricted-access location, or in a nonrestricted-access area.
- Pre-cleanup sampling data used to establish the spill boundaries, if required because of insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.
- A brief description of the solid surfaces cleaned.
- Approximate depth of soil excavation and the amount of soil removed.
- Post-cleanup verification sampling data and, if not otherwise apparent from the documentation, a brief description of the sampling methodology and analytical technique used.

While not required for compliance with the PCB Spill Cleanup Policy, information on the estimated cost of cleanup (by person-hours, dollars, or both) and any personnel exposure to PCBs associated with the spill should be maintained in the records.

12.8 MODULE 12E: SPILLS OF < 1 POUND OF LOW-CONCENTRATION PCBs

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 12.3 to arrive at Module 12E.

Reminder

Spilled PCBs → ≥ 50 ppm → Occurred after 5/4/87 → Most spills → < 500 ppm
Low-concentration spills of < 1 pound PCBs or < 270 gallons of untested mineral oil
→ Module 12E

Low-concentration spills (i.e., those involving PCBs with concentrations of < 500 ppm) of < 1 lb. PCBs by weight or < 270 gallons of untested mineral oil are generally subject to less stringent requirements than larger or higher-concentration spills, although EPA retains the right to require more stringent cleanup if it deems that the situation requires it. The following four sections of this module describe the requirements for addressing such low-concentration spills:

- Section 12.8.1 - Notification,
- Section 12.8.2 - Spill Cleanup,
- Section 12.8.3 - Disposal of Contaminated Materials, and
- Section 12.8.4 - Recordkeeping.

12.8.1 NOTIFICATION

Notification of EPA is not required for low-concentration spills of < 1 pound PCBs by weight or spills of < 270 gallons of untested mineral oil.

12.8.2 SPILL CLEANUP

The following decontamination requirements apply:

- Solid surfaces must be double-washed/rinsed, except that all indoor, residential surfaces other than vault areas must be cleaned to ≤ 10 micrograms per 100 square centimeters by standard commercial wipe tests.
- All soil within the spill area (i.e., visible traces of soil and a buffer of 1 lateral foot around the visible traces) must be excavated, and the ground must be restored to its original configuration by back-filling with soil containing PCBs at a concentration of < 1 ppm.

These requirements must be completed within **48 hours** after the responsible party was notified or became aware of the spill.

Clarification

Effect of Emergency or Adverse Weather

Completion of cleanup may be delayed beyond 48 hours in case of circumstances that include, but are not limited to:

- Civil emergency,
- Adverse weather conditions,
- Lack of access to the site, or
- Emergency operating conditions.

The cleanup must not be delayed because the spill occurred on a weekend or involves overtime costs. Owners of spilled PCBs who have delayed cleanup because of the types of circumstances listed above must keep records documenting the fact that circumstances precluded rapid response. Completion of cleanup may be delayed only for the duration of the adverse conditions [40 CFR 761.125(b)(2)].

Note that TSCA does not specify how indoor, residential surfaces other than vault areas are to be decontaminated to meet the numerical cleanup standards described in this section. Nonetheless, EPA has tested two cleaners that are widely used: a water-based industrial detergent (Penetone Power Cleaner 155) and an organic solvent (kerosene). Both cleaners were relatively effective in cleaning spills on steel (a non-porous surface). On porous surfaces, however, the detergent was not effective in reducing PCB concentration, and the solvent caused both the solvent and PCBs to be absorbed into the contaminated material. Overall, EPA found that the Penetone Power Cleaner was significantly less effective than the organic solvent in reducing the concentration of PCBs. EPA has received anecdotal information, however, which suggests that the detergent cleaner may be more effective on soiled surfaces because of the tendency of PCBs to bind to dirt [52 *Federal Register* 10703].

Prior to cleanup, you should consider whether the solvent used to decontaminate TSCA spills could result in a mixture of PCBs and RCRA hazardous waste. You should try to avoid solvents that will become RCRA hazardous waste. In addition, you could consult with the EPA Region for suggestions on the type of cleaners to use.

If adverse weather conditions or a time lapse due to an emergency has left insufficient visible traces of the spill, the responsible party must use a statistically based sampling scheme to determine the spill boundaries [40 CFR 761.125(b)(2)].

12.8.3 DISPOSAL OF CONTAMINATED MATERIALS

All concentrated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under TSCA must be properly stored, marked, transported, and disposed of [40 CFR 761.125(a)(2)]. It is important to remember that any contaminated material must be considered to have the same PCB concentration as the material that was spilled, for the purposes of storage, marking, transport, disposal, and other activities regulated by TSCA. Chapters 6, 7, 8, and 9 of this manual contain instructions on how to properly mark, store, transport, and dispose of contaminated materials, respectively.

12.8.4 RECORDKEEPING

At the completion of cleanup, the responsible party must document the cleanup with records and certification of decontamination. The records and certification must be maintained for a period of 5 years and must consist of the following [40 CFR 761.125(b)(3)]:

- A description of the source of the spill (e.g., type of equipment).

- The estimated or actual date and time of the spill occurrence.
- The date and time cleanup was completed or terminated. If cleanup was delayed by emergency or adverse weather, record the nature and duration of the delay.
- A brief description of the spill location.
- Pre-cleanup sampling data used to establish the spill boundaries, if required because of insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.
- A brief description of the solid surfaces cleaned and the double-wash/rinse method used.
- Approximate depth of soil excavation and the amount of soil removed.
- A certification statement signed by the responsible party stating that the cleanup requirements have been met and that the information contained in the record is true to the best of his or her knowledge.

Although they are not required for compliance with this policy, records of additional pre- or post-cleanup sampling and the estimated cost of the cleanup by person-hours, dollars, or both should be maintained by DOE Personnel.

12.9 REFERENCES

Std. Scrap. 1990. TSCA Appeal No 87-4, In the Matter of Standard Scrap Metal Company, Respondent, Docket No. TSCA-V-C-288, August 2, 1990.

USDOE. 1992. Remedial actions at DOE environmental restoration sites contaminated with polychlorinated biphenyls (PCBs). Washington, DC: U.S. Department of Energy. Office of Environmental Guidance memorandum. November 24, 1992.

USEPA. 1983. Distillation, solvent extraction, filtration, and other physical separation methods for PCBs, Washington, DC: U.S. Environmental Protection Agency. Office of Pesticides and Toxic Substances. TSCA Compliance Program Policy No. 6-PCB-2. August 16, 1983.

USEPA. 1985. Verification of PCB spill cleanup by sampling and analysis. Washington, DC: U.S. Environmental Protection Agency. Office of Toxic Substances. EPA-560/5-85-026. August 1985.

USEPA. 1986. Field manual for grid sampling of PCB spill sites to verify cleanup. Washington, DC: U.S. Environmental Protection Agency. Office of Toxic Substances. EPA-560/5-86-017. May 1986.

USEPA. 1987. Wipe sampling and double wash/rinse cleanup as recommended by the EPA PCB Spill Cleanup Policy. Washington, DC: U.S. Environmental Protection Agency. Office of Pesticides and Toxics. June 1987, Revised April 18, 1991.

USEPA. 1990a. Fact sheet: Polychlorinated biphenyls (PCBs) disposal notices. Available in conjunction with: Interim guidance on non-liquid PCB disposal methods to be used as alternatives to a 40 CFR 761.75 chemical waste landfill (CWL) (draft). Washington, DC: U.S. Environmental Agency. Office of Emergency and Remedial Response. July 3, 1990.

USEPA. 1990b. A guide on remedial actions at Superfund sites with PCB contamination. Washington, DC: U.S. Environmental Protection Agency. Office of Emergency and Remedial Response, Hazardous Site Control Division (OS-220). OSWER Directive 9355.4-01FS. August 1990.

USEPA. 1990c. Guidance on remedial actions for Superfund sites with PCB contamination. Washington, DC: U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. EPA/540/G-90007. August 1990.

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12.10 CHECKLIST FOR CHAPTER 12 – SPILL REPORTING AND CLEANUP

The following checklist allows PCB managers to determine how well they are complying with TSCA PCB spill regulations. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of non-compliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	Are all releases involving ≥ 1 pound of PCBs by weight (the Reportable Quantity) over a 24-hour period reported immediately to the National Response Center?	_____	_____	_____
General	Are spill notification and cleanup requirements of other Federal regulations (e.g., the CWA, RCRA, SARA Title III) being applied to PCB spills as appropriate?	_____	_____	_____
General	Is the PCB concentration in the material spilled, rather than the PCB concentration in the material onto which the PCBs have been spilled, used to determine the PCB concentration of each spill?	_____	_____	_____
General	If any state regulations apply that are more restrictive or cover more situations than the Federal regula-			

Continued on the next page

Module	1 Yes	2 No	3 N/A
tions, are spill notification and cleanup practices complying with these state regulations?	_____	_____	_____
A Although TSCA regulations do not apply to spills of material with a PCB concentration of < 50 ppm, is the most stringent requirement of other applicable regulations (e.g., CWA, CERCLA, AND RCRA) being applied to these spills?	_____	_____	_____
A When a spill of untested mineral oil occurs, are all relevant TSCA spill requirements being complied with?	_____	_____	_____
B Are spills that occurred before May 4, 1987, but discovered after that date reported to the EPA Regional Office?	_____	_____	_____
C Are PCB spills reported to the EPA Regional Office within 24 hours after discovery?	_____	_____	_____
C Has a high-concentration spill or a low-concentration spill involving ≥ 1 lb. of PCBs by weight (or ≥ 270 gallons of untested mineral oil) contaminated animal grazing lands or vegetable gardens?	_____	_____	_____
If there are visible traces of the spill, have all of the following actions been taken within 24 hours after discovery?	_____	_____	_____

Continued on the next page

Module	1 Yes	2 No	3 N/A
• Restriction of the area encompassing the visible traces plus a three-foot buffer;	_____	_____	_____
• Placement of clearly visible signs advising people to avoid the area;	_____	_____	_____
• Recording and documenting the area of visible contamination; and	_____	_____	_____
• Initiation of cleanup of all visible traces of the fluid on hard surfaces and initiation of removal of all visible traces of the spill on soil and other media.	_____	_____	_____
If there are insufficient visible traces of PCBs remaining at the spill site:	_____	_____	_____
• Has the fact that no visible traces exist been documented?	_____	_____	_____
• Has an estimate of the spill area been made and the area cordoned off?	_____	_____	_____
• Was the BPA Regional Office contacted as soon as practicable for guidance in identifying the spill boundaries?	_____	_____	_____

Continued on the next page

Module		1 Yes	2 No	3 N/A
C	Has a low-concentration spill involving < 1 lb. of PCBs by weight (or < 270 gallons of untested mineral oil) contaminated animal grazing lands or vegetable gardens?			
	• Have contaminated solid surfaces been double washed/rinsed?	_____	_____	_____
	• Have indoor residential surfaces other than vault areas been cleaned to 10 micrograms/100 cm ² by standard commercial wipe tests?	_____	_____	_____
	• Has soil within the spill area been excavated and the ground restored with back-fill containing a PCB concentration of < 1 ppm?	_____	_____	_____
D	If > 10 lbs. of PCBs by weight of a high- or a low-concentration spill occurs, is the EPA Regional Office contacted within 24 hours after discovery?	_____	_____	_____
D	Are there visible traces of a high-concentration spill or traces of ≥ 1 lb. of PCBs?			
	• Was the spill area, including a 3-foot buffer, cordoned off?	_____	_____	_____
	• Were signs placed warning people to avoid the area?	_____	_____	_____

Continued on the next page

Module	1 Yes	2 No	3 N/A
<ul style="list-style-type: none"> Was the extent of the spill area recorded and documented? 	_____	_____	_____
<ul style="list-style-type: none"> Was cleanup of hard surfaces, soil, and other media initiated within 24 hours of discovery of the spill? 	_____	_____	_____
<ul style="list-style-type: none"> Has the fact that there are no visible traces been documented? 	_____	_____	_____
<ul style="list-style-type: none"> Has an estimate of the spill area been made and is the area cordoned off? 	_____	_____	_____
<ul style="list-style-type: none"> Was the EPA Regional Office contacted as soon as practicable? 	_____	_____	_____
D Have the appropriate decontamination standards been applied for high-concentration spills or low-concentration spills involving ≥ 1 lb. of PCBs, depending on whether the spill occurred in an outdoor electrical substation, a restricted area other than an outdoor electrical substation, or a non-restricted area?	_____	_____	_____
D For all high-concentration spills and low-concentration spills involving ≥ 1 lb. of PCBs, is post-cleanup sampling performed as required by TSCA?	_____	_____	_____

Continued on the next page

Module	1 Yes	2 No	3 N/A
E For low-concentration spills involving ≤ 1 lb. of PCBs (or ≤ 270 gallons of untested mineral oil), have the decontamination standards been applied and the decontamination completed within 48 hours after discovery of the spill?	_____	_____	_____

For all applicable questions, your answer should be yes. If you answered no, read the referenced module for further guidance.

CHAPTER 13

BURNING OF USED OIL FOR ENERGY RECOVERY

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13.1 INTRODUCTION

According to 40 CFR 279.1, "used oil" means any oil that has been refined from crude oil or any synthetic oil, and that has been used and as a result of such use is contaminated by physical or chemical impurities. Used oil burned for energy recovery not regulated as a RCRA hazardous waste is termed "used oil fuel." Used oil fuel includes any fuel produced from used oil by processing, blending, or other treatment. *PCB-containing used oil burned for energy recovery must contain PCBs at concentrations of < 50 ppm [53 Federal Register 24206].*

This chapter covers the TSCA regulations for marketing and burning used oil at PCB concentrations < 50 ppm for energy recovery at 40 CFR 761.20. *Note that some EPA Regions interpret the term "marketing" to mean shipping materials to another part of the same organization.* These regulations are in addition to any applicable RCRA requirements at 40 CFR Part 279. For the convenience of DOE Personnel using this manual, this chapter also introduces the applicable RCRA regulations at 40 CFR Part 279. EPA recently revised the RCRA regulations governing burning used oil for energy recovery. These revisions have been incorporated in this manual. For more information, consult 57 *Federal Register* 41566, September 10, 1992, and 58 *Federal Register* 26420, May 3, 1993.

The TSCA requirements described in this chapter only apply to marketing and burning of used oil containing quantifiable levels of PCBs (i.e., ≥ 2 ppm) for energy recovery. Generators who market used oil contaminated with PCBs directly to a burner or burn such used oil for energy recovery must comply with the TSCA regulations for marketers or burners, as appropriate.

This chapter does not cover TSCA requirements for waste oil containing a detectable concentration of PCBs that is not burned for energy recovery. If an authorized use has not been identified for used oil containing ≥ 2 ppm PCBs, it is subject to restrictions on disposal under TSCA and the appropriate regulations on storage and disposal of used oil under RCRA at 40 CFR Part 279. TSCA regulations that apply to the disposal of such waste oil are discussed in Chapter 9, "Disposal."

In addition, this chapter does not cover used oil burned for energy recovery in any boiler or industrial furnace that is regulated under Subpart O (RCRA-permitted hazardous waste incinerators) of 40 CFR Part 264 or Subpart O (RCRA interim status hazardous waste incinerators) of 40 CFR Part 265 [40 CFR 266.40(a)].

DOE Personnel should refer to this chapter to identify additional TSCA and RCRA requirements that apply to marketers and burners of used oil contaminated with a detectable

concentration of PCBs for energy recovery (i.e., used oil that contains a PCB concentration of ≥ 2 ppm).

13.2 GENERAL REQUIREMENTS AND CONSIDERATIONS

Caution

It is important that you read and understand this section because it describes general requirements and considerations that apply to all PCBs or PCB Items under TSCA and other potentially applicable laws. In addition, for PCB material that is mixed with RCRA hazardous waste or contaminated with radioactive material, this section provides brief descriptions of (or regulatory citations for) requirements under RCRA or the AEA. These types of requirements are explained up front because they should be considered concurrently with the remainder of the requirements in this chapter.

13.2.1 DEFINITIONS

Many of the terms used in this chapter are common terms that have a very specific meaning under the PCB regulations and are defined at 40 CFR 761.3. For the convenience of DOE Personnel using this guidance, these regulatory definitions have been incorporated into the Glossary of this manual. The definitions of the following terms are particularly important for understanding the requirements covered in this chapter:

- Conditionally exempt small quantity generator,
- Used oil,
- Used oil fuel,
- Used oil burner,
- Used oil fuel marketer,
- Used oil generator, and
- Waste oil.

When confronted with an unfamiliar term, consult the Glossary.

13.2.2 CONFLICTING REGULATORY REQUIREMENTS

DOE Order 5400.1, "General Environmental Protection Program," states that it is DOE policy to comply with the letter and spirit of all applicable environmental statutes, regulations, and standards in a manner that limits risks to the environment and protects public health.

Where a requirement under one authority is stricter than another (e.g., spill cleanup standards), DOE must comply with the stricter requirement. The TSCA regulations do not preempt other more stringent Federal statutes and regulations [40 CFR 761.1(e)].

If it is impossible to comply with all applicable regulations because compliance with one set of requirements would directly conflict with other applicable requirements, contact the DOE Office of Environment (EH-20) for instructions on how to proceed. EH-20 may recommend that you also consult with the appropriate EPA Regional office or state regulatory agency. In addition, DOE Order 5400.2A, "Environmental Compliance Issue Coordination," sets forth DOE policy, direction, and procedures for coordination of such environmental issues.

13.2.3 STATE REGULATIONS

The state in which the used oil is located may have additional regulations that apply to the burning of used oil for energy recovery. Several states regulate used oil as a hazardous waste, and some states regulate it as a special waste. State regulations are not covered in this guidance document. Users of this guidance should determine if there are any state requirements that apply.

13.2.4 PCB MATERIAL MIXED WITH RCRA HAZARDOUS WASTE

Used oil containing PCBs mixed with RCRA hazardous waste that is burned for energy recovery is subject to:

- RCRA requirements for used oil burned for energy recovery as described in Module 13A or 13B, as appropriate;
- Applicable TSCA requirements for such used oil as defined in Module 13C;
- DOE Order 5400.1, "General Environmental Protection Program"; and
- DOE Order 5400.3, "Hazardous and Radioactive Mixed Waste Program."

As you use the modules in this chapter, keep in mind that you must comply with all of the applicable requirements. The RCRA and TSCA regulations assume that used oil burned for energy recovery contains quantifiable levels of PCBs (i.e., ≥ 2 ppm) unless there is information that proves otherwise. Used oil may not be burned for energy recovery at PCB concentrations ≥ 50 ppm.

13.2.5 PCB MATERIAL CONTAMINATED WITH RADIOACTIVE CONSTITUENTS

PCBs or PCB Items that are contaminated with radioactive constituents are regulated by the Atomic Energy Act (AEA) and applicable DOE orders, as well as TSCA. It is important to note that the AEA and DOE order requirements apply to PCB material contaminated with radioactive constituents regardless of the concentration of PCBs. Thus, PCBs and PCB Items with PCB concentrations of < 50 ppm may not be regulated by TSCA, but may be subject to any applicable AEA and DOE order requirements. Refer to Section 2.6 for details.

13.3 MASTER FLOW CHART: BURNING OF USED OIL FOR ENERGY RECOVERY

The flow chart and the supplemental information on the following pages will help you identify the requirements that apply to the burning of used oil for energy recovery.

MASTER FLOW CHART: BURNING OF USED OIL FOR ENERGY RECOVERY
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: BURNING OF USED OIL FOR ENERGY RECOVERY

Start Before you start this flow chart, you should have answered the following five preliminary questions:

1. What is the TSCA PCB category for the material?
2. Is the material to be managed as a waste?
3. What is the concentration of PCBs in the material?
4. Is the PCB material mixed with RCRA hazardous waste?
5. Is the PCB material contaminated with radioactive material?

For detailed instructions on how to answer these questions, refer to Chapter 2, "Characterization of PCB Materials."

This chapter covers the TSCA requirements for marketing or burning used oil containing PCBs at concentrations of ≥ 2 ppm but < 50 ppm. ***Used oil containing PCBs at a concentration of ≥ 50 ppm must be disposed of in accordance with the TSCA regulations at 40 CFR 761.60 (see Chapter 9, "Disposal"). PCB-contaminated used oil that contains a PCB concentration of ≥ 50 ppm is exempt from RCRA regulations for used oil at 40 CFR Part 279 [40 CFR 279.10(i)]. Blending of used oil for the purposes of reducing the concentration of PCBs to < 50 ppm or the level of detection (2 ppm) is prohibited [58 Federal Register 26423].***

Step 1 Before proceeding further, you should be thoroughly familiar with Section 13.2, "General Requirements and Considerations," which contains information about requirements that could apply to any used oil containing PCBs at a concentration of ≥ 2 ppm but < 50 ppm burned for energy recovery. Be sure to read all modules that apply.

Step 2 **Was the used oil mixed with a RCRA hazardous waste?** If yes, proceed to Step 3. If the used oil was not mixed with a hazardous waste, skip to Step 8.

Step 3 **Was the used oil mixed with RCRA hazardous waste generated by a conditionally exempt small quantity generator?** A generator of RCRA hazardous waste is a conditionally exempt small quantity generator when no more than 100 Kg of hazardous waste is generated in a calendar month [40 CFR 261.5(a)]. Mixtures of used oil and conditionally exempt small quantity generator hazardous waste regulated under 40 CFR 261.5 are subject to regulation as used oil under 40 CFR Part 279 [40 CFR 279.10(b)(3)]. Go to Modules B and C.

If the used oil was not mixed with hazardous waste generated solely by a conditionally exempt small quantity generator, proceed to Step 4.

Step 4 **Was the used oil mixed with a RCRA hazardous waste that is listed in 40 CFR Part 261, Subpart D (i.e., a listed waste)?** If so, go to Module 13A.

If the used oil was mixed with a RCRA hazardous waste that is not listed in 40 CFR Part 261, Subpart D, but exhibits any characteristic of hazardous waste identified in 40 CFR Part 261, Subpart C, proceed to Step 5.

- Step 5** Does the mixture of used oil and characteristic hazardous waste exhibit any characteristic of hazardous waste identified under 40 CFR Part 261, Subpart C? If the mixture does exhibit a characteristic of hazardous waste, proceed to Step 6.

If the mixture does not exhibit any characteristic of hazardous waste, the mixture is subject to regulation as used oil under 40 CFR Part 279 [40 CFR 279.10(b)(2)(ii)]. Go to Modules B and C.

- Step 6** Was the used oil mixed with a waste that is hazardous under RCRA only because it exhibits the characteristic of ignitability? If so, proceed to Step 7.

If the used oil was mixed with a characteristic waste that exhibits any other RCRA hazardous waste characteristic (i.e., toxicity, corrosivity, or reactivity), go to Module 13A.

- Step 7** Does the mixture of used oil and characteristic hazardous waste exhibit the characteristic of ignitability under 40 CFR 261.21? If so, go to Module 13A.

If the resulting mixture does not exhibit the ignitability characteristic, the mixture is subject to regulation as used oil under 40 CFR Part 279 [40 CFR 279.10(b)(2)(iii)]. Go to Modules B and C.

- Step 8** Does the used oil contain > 1,000 ppm total halogens? If so, it is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in 40 CFR Part 261, Subpart D [40 CFR 279.10(b)(1)(ii)]. Go to Module 13A.

Clarification

Rebuttable Presumption for Used Oil

You may rebut this presumption by demonstrating that the used oil does not contain hazardous waste by using an analytical method from SW-846 (USEPA 1986) to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in Appendix VIII of 40 CFR Part 261 [40 CFR 279.10(b)(1)(ii)]. Note: Two types of used oil are conditionally exempt from the requirement to document the rebuttal: used metalworking oils containing chlorinated paraffins and used compressor oils containing chlorofluorocarbons (CFCs) [57 *Federal Register* 41579].

If the used oil contains $\leq$ 1,000 ppm total halogens, or you can demonstrate that the used oil does not contain hazardous waste, then the used oil is subject to regulation under 40 CFR Part 279. Proceed to Modules B and C.

13.4 MODULE 13A: USED OIL REGULATED BY RCRA AS HAZARDOUS WASTE

To ensure that you are in the correct module, the box below provides a reminder of the decision paths that you should have taken in the Master Flow Chart in Section 13.3 to arrive at Module 13A.

Reminder

Used Oil → Mixed with a hazardous waste → Not generated only by a conditionally exempt small quantity generator → Mixed with listed waste → Module 13A

Used Oil → Mixed with a hazardous waste → Not generated only by a conditionally exempt small quantity generator → Not mixed with a listed waste → Exhibits a characteristic of hazardous waste → Not mixed with an ignitable waste → Module 13A

Used Oil → Mixed with a hazardous waste → Not generated only by a conditionally exempt small quantity generator → Not mixed with a listed waste → Exhibits a characteristic of hazardous waste → Mixed with an ignitable waste → Mixture exhibits ignitable characteristic → Module 13A

Used Oil → Not mixed with a hazardous waste → > 1,000 ppm total halogens → Module 13A

The following types of used oil are regulated by RCRA as hazardous waste under 40 CFR Parts 260 through 266, 268, 270, and 271, rather than as used oil [40 CFR 279.10(b)]:

- Mixtures of used oil and a listed hazardous waste (i.e., a waste that is listed in 40 CFR Part 261, Subpart D), unless the hazardous waste was generated solely by a small quantity generator.
- Used oil mixed with a characteristic hazardous waste (i.e., a waste that exhibited a hazardous waste characteristic of toxicity, corrosivity, or reactivity identified in 40 CFR Part 261, Subpart C before being mixed with used oil).
- Mixtures of used oil and characteristic hazardous waste that exhibit the characteristic of ignitability under 40 CFR 261.21.

- Used oil containing > 1,000 ppm total halogens, unless the presumption that this used oil has been mixed with a hazardous waste can be successfully rebutted.

RCRA places restrictions on generators, transporters, marketers, and burners of hazardous waste. It is not within the scope of this guidance to provide detailed information on these RCRA requirements. Please refer to 40 CFR Parts 260 through 268, 270, and 279. *Note: On September 10, 1992, EPA promulgated new RCRA standards for used oil management at 40 CFR Part 279 replacing 40 CFR Part 266, Subpart E, which had previously regulated used oil under RCRA [57 Federal Register 41566]. DOE issued a regulatory bulletin on this rule in December 1992 (USDOE 1992).*

13.5 MODULE 13B: RCRA REQUIREMENTS FOR USED OIL

To ensure that you are in the correct module, the box below provides a reminder of the decision paths that you should have taken in the Master Flow Chart in Section 13.3 to arrive at Module 13B.

Reminder

Used Oil → Mixed with a hazardous waste → Generated only by a conditionally exempt small quantity generator → Module 13B

Used oil → Mixed with a hazardous waste → Not generated only by a conditionally exempt small quantity generator → Not mixed with a listed waste → Does not exhibit a characteristic of hazardous waste → Module 13B

Used oil → Mixed with a hazardous waste → Not generated only by a conditionally exempt small quantity generator → Not mixed with a listed waste → Exhibits a characteristic of hazardous waste → Mixed with an ignitable waste → Mixture does not exhibit ignitable characteristic → Module 13B

Used Oil → Not mixed with a hazardous waste → $\leq 1,000$ ppm total halogens → Module 13B

This module describes the RCRA restrictions and requirements applicable to used oil burned for energy recovery under 40 CFR Part 279. The RCRA regulations at 40 CFR Part 279 establish requirements that apply to used oil generators, collection centers and aggregation points, transporters and transfer facilities, processors and re-refiners, burners, marketers, and disposers. *Note: Although 40 CFR 279.82 allows the use of used oil as a dust suppressant, such use is **prohibited** for used oil containing PCBs at a concentration of ≥ 2 ppm [40 CFR 761.20(d)].*

According to 40 CFR 279.10, used oil subject to the RCRA regulations at 40 CFR Part 279 includes:

- Used oil that is not regulated as hazardous waste;
- Mixtures of used oil and non-hazardous solid wastes;

- Mixtures of used oil and fuels or other products (unless it is a mixture of used oil and diesel fuel that meets the conditions specified at 40 CFR 279.10(d)(2));
- Materials produced from used oil that are burned for energy recovery;
- Wastewater that is contaminated with used oil as a result of abnormal manufacturing operations that resulted in substantial leaks, spills, or other releases;
- Used oil recovered from wastewaters; and
- Used oil introduced into crude oil or natural gas pipelines, prior to the point of introduction to the pipeline.

Used oil with a PCB concentration of ≥ 50 ppm (i.e., PCB-containing used oil subject to the TSCA regulations at 40 CFR Part 761) is exempt from the RCRA regulations at 40 CFR Part 279 [40 CFR 279.10(i)], because it may not be burned for energy recovery [53 *Federal Register* 24206].

Note: On September 10, 1992, EPA promulgated new RCRA standards for used oil management at 40 CFR Part 279 replacing 40 CFR Part 266, Subpart E, which had previously regulated used oil under RCRA [57 Federal Register 41566]. DOE issued a regulatory bulletin on this rule in December 1992 (USDOE 1992).

Proceed to the flow chart on the next page for additional guidance.

This page is intentionally left blank to allow the flow chart on the following page to appear opposite the supplemental information.

MODULE 13B
13.5 RCRA Requirements for Used Oil

SUPPLEMENTAL INFORMATION FOR SECTION 13.5, RCRA REQUIREMENTS FOR USED OIL

Step 1 Start

Step 2 Does the used oil meet the specification levels? The following table lists the maximum allowable levels for certain constituents and properties of used oil [40 CFR 279.11]:

<u>Constituent/Property</u>	<u>Allowable Level</u>
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100° F minimum
Total Halogens	4,000 ppm maximum

If it is shown that the used oil meets the specification (i.e., it is within the allowable level for each constituent or property), go to Step 2A. If used oil exceeds any of the allowable levels and properties in this table, go to Step 2B.

Step 2A Used oil that meets the specification is only subject to the RCRA requirements at 40 CFR Part 279 until it has been shown that the used oil does not exceed any specification in accordance with the procedures at 40 CFR 279.72, 40 CFR 279.73, and 40 CFR 279.74(b) [40 CFR 279.11]. Specification used oil is subject to the TSCA regulations for marketers and burners of used oil at 40 CFR 761.20(e), discussed in Module D.

Step 2B Used oil that exceeds the specification levels is termed "off-specification used oil fuel." Off-specification used oil is subject to the RCRA requirements at 40 CFR Part 279.

It is beyond the scope of this guidance to discuss the requirements of 40 CFR Part 279 in detail. However, the DOE Office of Environmental Guidance (EH-231) issued a regulatory bulletin shortly after the promulgation of the used oil regulations at 40 CFR Part 279 (USDOE 1992). The final rule promulgating standards for the management of used oil was published in the *Federal Register* on September 10, 1992 [57 *Federal Register* 41566].

Off-specification used oil is also subject to the TSCA regulations for marketers and burners of used oil at 40 CFR 761.20(e), discussed in Module 13C [58 *Federal Register* 26423].

13.6 MODULE 13C: TSCA REQUIREMENTS FOR MARKETERS AND BURNERS OF USED OIL

To ensure that you are in the correct module, the box below provides a reminder of the decision path that you should have taken in the Master Flow Chart in Section 13.3 to arrive at Module 13C.

Reminder

Module 13B → Module 13C

This module describes the TSCA requirements at 40 CFR 761.20(e) for marketers and burners of used oil for energy recovery. These TSCA requirements are in addition to the applicable RCRA requirements at 40 CFR Part 279, as described in Module 13B of this chapter.

Note: EPA issued a technical amendment to the TSCA regulations at 40 CFR Part 761 acknowledging the new RCRA regulations at 40 CFR Part 279 and revising the TSCA citations to the RCRA regulations accordingly [58 *Federal Register* 15435].

13.6.1 TESTING OF USED OIL FUEL

Used oil containing any quantifiable level of PCBs (i.e., ≥ 2 ppm) is subject to the requirements described in this module. Used oil to be burned for energy recovery is presumed to contain PCBs at a quantifiable level, unless testing is conducted or other information is obtained that shows that the used oil fuel does not contain a quantifiable level of PCBs [40 CFR 761.20(e)(2)].

The person who first claims that a used oil fuel does not contain a quantifiable level of PCBs must obtain analyses or other information to support that claim [40 CFR 761.20(e)(2)(i)]. Other information documenting that the used oil fuel does not contain quantifiable levels of PCBs may consist of either personal, special knowledge of the source and composition of the used oil, or a certificate from the person generating the used oil claiming that the oil contains no detectable PCBs [40 CFR 761.20(e)(2)(iii)].

Testing to determine the PCB concentration in used oil may be conducted on individual samples or in accordance with the following procedures. Representative samples may be taken from either common containers (provided that no other chemical substances or mixtures, e.g., non-waste oils, are added to the container) or individual electrical equipment to determine the PCB concentration. *Remember that the Anti-dilution Rule applies to common containers; if waste oil with a higher PCB concentration category is added, it will cause the entire common container to be regulated as if it has the higher concentration. See Section 2.4.*

Representative samples of mineral oil dielectric fluid are either: (1) samples taken in accordance with ASTM D 923-86, or (2) samples taken from a container that has been thoroughly mixed in a manner such that any PCBs in the container are uniformly distributed throughout the liquid in the container [40 CFR 761.60(g)(2)].

If it is determined that used oil does not contain a quantifiable level of PCBs, marketers and burners of this used oil are not subject to the TSCA requirements described in the remainder of this module [40 CFR 761.20(e)]. Otherwise, DOE Personnel should read Section 13.6.2, "Marketers," or Section 13.6.3, "Burners," as appropriate.

Clarification

Anti-dilution Rule

If any PCBs at a concentration of ≥ 50 ppm have been added to the container or equipment, then the total container contents must be considered as having a PCB concentration of ≥ 50 ppm for disposal [40 CFR 761.20(e)(2)(ii)]. Likewise, if any PCBs at a concentration of ≥ 500 ppm have been added to the container or equipment, then the total container contents must be considered as having a PCB concentration of ≥ 500 ppm for disposal [40 CFR 761.60(g)(2)]. *Used oil with a PCB concentration ≥ 50 ppm may not be burned for energy recovery; it must be disposed of according to 40 CFR 761.60 (see Chapter 9, "Disposal").*

13.6.2 MARKETERS

■ Recordkeeping

Marketers of specification used oil fuel who first claim that the used oil fuel contains no detectable PCBs must keep copies of the analysis or other information documenting this claim [40 CFR 761.20(e)(4)(i)].

Marketers of off-specification used oil fuel who first claim that the used oil fuel contains no detectable PCBs must keep a copy of each certification notice received or prepared relating to transactions involving PCB-containing used oil [40 CFR 761.20(e)(4)(i)].

■ Marketing Restrictions

Used oil containing any quantifiable level of PCBs may be marketed only to:

- Other marketers who have notified EPA of their used oil management activities and who have an EPA identification number [40 CFR 761.20(e)(1)(ii) and 40 CFR 279.73];
- Qualified incinerators, as defined by 40 CFR 761.3 (see Glossary) [40 CFR 761.20(e)(1)(i)]; and
- Burners identified at 40 CFR Part 279, Subpart G [40 CFR 761.20(e)(1)(iii)].

13.6.3 BURNERS

■ Certification Notices

Before a burner accepts the first shipment of used oil fuel containing a detectable PCB quantity (i.e., ≥ 2 ppm) from a marketer, the burner must provide the marketer with a one-time written and signed notice certifying that:

- The burner has complied with any notification requirements applicable to qualified incinerators (see Glossary) or burners regulated under RCRA at 40 CFR Part 279, Subpart G; and
- The burner will burn the used oil only in a combustion facility identified in 40 CFR 761.20(e)(1), as described below, and identify the class of burner it qualifies for [40 CFR 761.20(e)(3)(ii)].

■ Recordkeeping

Burners of used oil fuel containing a detectable quantity of PCBs must include a copy of each certification notice that is sent to a marketer among the records required by 40 CFR Part 279 [40 CFR 761.20(e)(4)(ii)].

Clarification

Note: Typographical Error in TSCA Regulations

40 CFR 761.20(e)(4)(ii) actually cites the certification required by "paragraph (e)(3)(iii) of this section." 40 CFR 761.20 does not contain a paragraph (e)(3)(iii); instead, the certification notice is discussed in paragraph (e)(3)(ii). The PCB Regulations Branch of the EPA Office of Pollution Prevention and Toxics has determined that the reference to paragraph (e)(3)(iii) is a typographical error and should read "paragraph (e)(3)(ii)."

■ Combustion Facilities

Used oil containing any quantifiable level of PCBs may be burned for energy recovery only in the following combustion facilities:

- Qualified incinerators, as defined by 40 CFR 761.3 (see Glossary);

- Facilities identified at 40 CFR 279.61(a); or
- Boilers that have been granted a variance by the EPA Regional Administrator, according to the criteria at 40 CFR 260.32 [40 CFR 761.20(e)(3)(i)].

The facilities must be operating at normal operating temperatures. Feeding of used oil containing any quantifiable level of PCBs during either startup or shutdown operations is **prohibited** [40 CFR 761.20(e)(3)(i)].

13.7 REFERENCES

USEPA. 1986. Test methods for evaluating solid waste: Physical/chemical methods (SW-846), 3rd ed. Vols. IA, IB, IC, and II. Washington, DC: U.S. Environmental Protection Agency: 955-001-00000-1.

USDOE. 1992. Identification and listing of hazardous waste: Used-oil final rule issued. Environmental Guidance Regulatory Bulletin. Washington, DC: U.S. Department of Energy. Office of Environment, Safety, and Health. Office of Environmental Guidance. RCRA/CERCLA Division (EH-231). December 31, 1992.

13.8 CHECKLIST FOR CHAPTER 13 -- BURNING OF USED OIL FOR ENERGY RECOVERY

The following checklist allows PCB managers to determine how well they are complying with the TSCA regulations governing marketing and burning of PCB-containing used oil for energy recovery. PCB managers are encouraged to use it to scrutinize current PCB management practices and to identify areas of noncompliance. If a particular question does not apply, check Column 3.

Checklist		1	2	3
Module		Yes	No	N/A
General	If any applicable state regulations exist that place additional restrictions or requirements on used oil burned for energy recovery, do your activities comply with these state regulations?	_____	_____	_____
A	If used oil is regulated as hazardous waste, do you comply with all applicable RCRA regulations?	_____	_____	_____
B	Does used oil burned for energy recovery meet all applicable RCRA requirements at 40 CFR Part 279?	_____	_____	_____
B	For specification used oil, have you documented that the used oil meets the specification as required by 40 CFR Part 279?	_____	_____	_____
B	For off-specification used oil, have you met all applicable requirements for management of used oil under 40 CFR Part 279?	_____	_____	_____

Continued on next page

Module		1 Yes	2 No	3 N/A
C	Before marketing or burning used oil fuel that contains PCBs at a concentration of < 2 ppm, do you obtain analyses or other information to substantiate this claim?	_____	_____	_____
C	Is a copy of each certification notice for a transaction involving off-specification used oil retained by the burner and the marketer?	_____	_____	_____
C	Is used oil fuel containing PCBs at a concentration of ≥ 2 ppm burned only in one of the following: a qualified incinerator, a facility identified at 40 CFR 279.61(a) or a boiler that has been granted a variance by the EPA Regional Administrator?	_____	_____	_____

The correct answer to all questions is yes. If you provided a different answer, read the referenced module for further guidance.

CHAPTER 14
OTHER REGULATORY REQUIREMENTS

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14.1 INTRODUCTION

PCB activities are also regulated by the Occupational Safety and Health Administration (OSHA), specifically with respect to worker safety. This chapter briefly discusses worker protection requirements applicable to the management of PCBs; namely, OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation found at 29 CFR 1910.120 and the Hazard Communication Standard at 29 CFR 1910.1200.

Although Federal agencies are exempt from the Occupational Safety and Health Act, DOE imposed upon itself mandatory compliance with OSHA regulations pursuant to DOE Order 5480.4, "Environmental Protection, Safety, and Health Protection Standards," and DOE Order 5483.1A, "Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned and Contractor-Operated Facilities."

This chapter also addresses briefly the requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA) as they apply to the management of PCBs. The EPCRA regulatory requirements relating to PCBs are found at 40 CFR Parts 350-372.

DOE Personnel should refer to this chapter before initiating any of the activities described in this chapter that are regulated by OSHA (i.e., site cleanups; RCRA treatment, storage, and disposal operations; or emergency responses) and involve PCBs. Using this chapter, they should also determine whether their PCB handling activities are subject to EPCRA. *See also the guidance document "Emergency Planning and Community Right-to-Know Act (EPCRA)" (USDOE 1991).*

Note that because of the diverse topics covered in this chapter, a section on general requirements and considerations has not been included.

14.2 MASTER FLOW CHART: OTHER REGULATORY REQUIREMENTS

The flow chart and the supplemental information on the following pages will help you to comply with worker safety and emergency planning and community right-to-know regulations applicable to PCBs and PCB Items.

MASTER FLOW CHART: OTHER REGULATORY REQUIREMENTS
Guide to Applicable Modules

SUPPLEMENTAL INFORMATION FOR MASTER FLOW CHART: OTHER REGULATORY REQUIREMENTS

Start The requirements described in this chapter may apply to any PCB handling operations. Note that the format of this chapter is slightly different from the other chapters of this guidance in that there is no "General Requirements and Considerations" section.

Step 1 Is your facility involved in any of the following site cleanup operations involving PCBs? The operations identified below are subject to the requirements of OSHA's worker protection standards for Hazardous Waste Operations and Emergency Response (HAZWOPER) found at 29 CFR 1910.120:

- Hazardous substance cleanups (including cleanups of PCBs) required by a governmental body (whether Federal, state, local, or other), which are conducted at uncontrolled hazardous waste sites [29 CFR 1910.120(a)(1)(i)];
- Corrective actions involving cleanup operations at sites covered by RCRA [29 CFR 1910.120(a)(1)(ii)]; and
- Voluntary cleanup operations at sites recognized by Federal, state, local, or other governmental bodies as uncontrolled hazardous waste sites [29 CFR 1910.120(a)(1)(iii)].

If your answer to the question is yes, the requirements described in 29 CFR 1910.120(a) through (o) apply. As you review these OSHA requirements, you should read Module 14A concurrently as it contains information about PCBs that is relevant to the HAZWOPER requirements. Then, proceed to Modules B and C.

If your facility is not involved in site cleanup operations, proceed to Step 2.

Step 2 Is your facility a treatment, storage, and disposal (TSD) facility involved in RCRA hazardous waste operations? If so, the HAZWOPER requirements described in 29 CFR 1910.120(p) apply [29 CFR 1910.120(a)(1)(iv)]. As you review these OSHA requirements, you should read Module 14A concurrently as it contains information about PCBs that is relevant to the HAZWOPER requirements. Then, proceed to Modules B and C.

If your facility is not involved in RCRA hazardous waste operations, proceed to Step 3.

Step 3 Is your facility involved in emergency response to the release of, or substantial threats of release of, hazardous substances? If your facility is involved in emergency response to a PCB spill, without regard to the location of the hazard, the requirements described in 29 CFR 1910.120(q) apply [29 CFR 1910.120(a)(1)(v)]. As you review these OSHA requirements, you should read Module 14A concurrently as it contains information about PCBs that is relevant to the HAZWOPER requirements. Then, proceed to Modules B and C.

If your facility is not involved in emergency response operations, proceed to Step 4.

Step 4 HAZWOPER does not apply. However, OSHA Hazard Communication Standard and EPCRA requirements may apply. Read Modules B and C.

14.3 MODULE 14A: HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (HAZWOPER)

To ensure that you are in the correct module, the box below provides a reminder of the decision paths you should have taken in the Master Flow Chart in Section 14.2 to arrive at Module 14A.

Reminder

PCB Activities → Site cleanup operations → Module 14A

PCB Activities → Hazardous waste operations → Module 14A

PCB Activities → Emergency response → Module 14A

As indicated in the Master Flow Chart for this chapter, certain operations involving PCBs are subject to the requirements of OSHA's worker protection standards for Hazardous Waste Operations and Emergency Response (HAZWOPER) found at 29 CFR 1910.120. These standards apply to the following operations:

- Hazardous substance cleanups (including cleanups of PCBs) required by a governmental body (whether Federal, state, local, or other), which are conducted at uncontrolled hazardous waste sites [29 CFR 1910.120(a)(1)(i)];
- Corrective actions involving cleanup operations at sites covered by RCRA [29 CFR 1910.120(a)(1)(ii)];
- Voluntary cleanup operations at sites recognized by Federal, state, local, or other governmental bodies as uncontrolled hazardous waste sites [29 CFR 1910.120(a)(1)(iii)];
- Hazardous waste operations that are conducted at treatment, storage, and disposal (TSD) facilities regulated by RCRA [29 CFR 1910.120(a)(1)(iv)]; and
- Emergency response to the release of, or substantial threats of release of, hazardous substances (including PCBs) without regard to the location of the hazard [29 CFR 1910.120(a)(1)(v)].

To comply with HAZWOPER, facilities engaging in site cleanup operations must comply with 29 CFR 1910.120(a) through (o); TSD facilities engaging in RCRA hazardous waste operations must comply with 29 CFR 1910.120(p); and facilities involved in emergency response operations must comply with 29 CFR 1910.120(q).

A thorough discussion of these requirements is beyond the scope of this manual; however, OSHA's HAZWOPER regulations are summarized in a series of "HAZWOPER Fact Sheets," which can be obtained by calling or writing the U.S. EPA/Emergency Response Team at:

2890 Woodbridge Avenue,
Building 18 (MS-101),
Edison, NJ 08837-3679
(908) 321-6740 or (FTS) 340-6740

See the reference list to this chapter for specific titles. Other useful sources of information on worker protection include the NIOSH criteria document identified in the reference list and the references identified in 29 CFR 1910.120.

OSHA publications may be obtained by calling or writing:

OSHA Publications Office
200 Constitution Ave., NW N3101
Washington, DC 20210
(202) 523-9667

The remainder of this module contains information about PCBs that is relevant to topics covered in HAZWOPER. Read all of the following sections of this module that apply:

- 14.3.1 Training,
- 14.3.2 Medical Surveillance,
- 14.3.3 Personal Protective Equipment (PPE),
- 14.3.4 Monitoring,
- 14.3.5 Decontamination,
- 14.3.6 Emergency Response, and
- 14.3.7 Sanitation.

14.3.1 TRAINING

Training, whether for site cleanups, RCRA TSD operations, or emergency response operations, should contain a discussion of the specific hazards from PCBs (e.g., chronic health effects, electrical hazards associated with PCB equipment, slippery conditions caused by PCB spills).

14.3.2 MEDICAL SURVEILLANCE

Physicians responsible for conducting the employee medical examinations required by HAZWOPER should be alerted that exposure to PCBs may occur as a result of the employee's activities and should conduct appropriate medical monitoring.

14.3.3 PERSONAL PROTECTIVE EQUIPMENT (PPE)

All employees working with PCBs should wear protective clothing (e.g., gloves, hair covers, disposable body suits, boots, and overshoes) that is impervious to PCBs. Boots and body suits should be coated with Saranex®. Tyvek® may be worn if PCBs are not present as free liquids but as a contaminant, for example, in soil. Both Saranex and Tyvek body suits should be disposed of after use because there is no effective means of decontaminating PCBs from clothing. At this time, a material known to be impervious to PCBs and thus useful for gloves and overboots is Viton®.

When it is possible that PCBs in free-liquid form could be splashed into workers' eyes, eye protection (i.e., chemical safety goggles, face shields, or safety glasses with side shields) should be worn. According to EPA, removing PCB-contaminated soil does not usually pose such a threat. Standards for eye protection are specified in 29 CFR 1910.133 and the American National Standard Institute (ANSI) protocol ANSI Z 87.1-1968, "Eye and Face Protection."

Due to the low vapor pressure of PCBs (0.00006 to 0.001 mm of Hg), respiratory protection is generally not necessary in open, well-ventilated areas or when cleaning up small spills. However, it is widely recommended that employees wear respirators under any of the following conditions:

- When exposed to PCB vapors from spills in confined areas,
- When entering an area of unknown PCB concentration,
- Whenever a measurement indicates that the PCB level exceeds 0.001 mg/m³ (1.0 ppb) in air, or

- When exposed to long-term production operations or large spills of PCBs (e.g., from a transformer rupture). Respiratory protection is important in the event of a transformer rupture because dangerous solvents (e.g., chlorobenzenes) that are mixed with the PCBs may also be released.

Requirements for respiratory protection are specified in 29 CFR 1910.134. OSHA Publication 3079, "Respiratory Protection," summarizes these requirements.

14.3.4 MONITORING

OSHA established limits for exposure to two types of PCBs in air. The permissible exposure limit (PEL) for chlorodiphenyl (54% chlorine) is 0.5 mg/m^3 . For chlorodiphenyl (42% chlorine), the PEL is 1.0 mg/m^3 . These limits are time-weighted averages for an 8-hour period.

The National Institute for Occupational Safety and Health (NIOSH) recommends a much stricter limit for occupational exposure to PCBs. This agency believes that no worker should be exposed to PCBs at concentrations greater than 0.001 mg/m^3 in air. This concentration is a time-weighted average for up to a 10-hour workday, 40-hour workweek. *Note that the PEL established by OSHA is legally binding, while the recommended exposure limit set by NIOSH is not.*

It is important to note that these occupational exposure limits are the upper bounds for exposure; workers and employers should make every effort to keep exposure to PCBs as low as reasonably achievable (ALARA).

14.3.5 DECONTAMINATION

There is no effective means of decontaminating clothing contaminated with PCBs. Clothing must be disposed of (see Chapter 9, "Disposal" for details).

14.3.6 EMERGENCY RESPONSE

During a fire, dangerous substances such as dioxins and polychlorinated dibenzofurans (PCDFs) can be released in addition to PCBs. Personnel responding to fires that may involve PCBs need to be alerted to this hazard. Because of potential exposure to these substances, it is common practice for personnel responding to fires that may involve PCBs to wear Level B personal protective equipment (PPE). Level B PPE requirements are described in Appendix B of 29 CFR 1910.120.

14.3.7 SANITATION

Workers should not leave the work area without changing their clothing. It is a good management practice for workers, after changing, to wash their hands and face upon leaving a work area containing PCBs.

14.4 MODULE 14B: HAZARD COMMUNICATION STANDARD

To ensure that you are in the correct module, the box below provides a reminder of the decision paths you should have taken in the Master Flow Chart in Section 14.2 to arrive at Module 14B.

Reminder

PCB Activities → Site cleanup operations → Module 14A → Module 14B

PCB Activities → Hazardous waste operations → Module 14A → Module 14B

PCB Activities → Emergency response → Module 14A → Module 14B

PCB Activities → HAZWOPER does not apply → Module 14B

The OSHA Hazard Communication Standard is also known as the worker "right-to-know" standard. (An analogous requirement, the Emergency Planning and Community Right-to-Know Act [EPCRA], is covered in Section 14.5.) The Hazard Communication Standard was developed to ensure that all workers and employers are aware of hazardous chemicals in the workplace, including PCBs, and that they know how to protect themselves from the hazards they pose. Specific requirements are found at 29 CFR 1910.1200 for general industry and at 29 CFR 1926.59 for construction activities.

The Hazard Communication Standard is summarized in OSHA Booklets 3084, 3104, and 3111. The address and phone number for obtaining these OSHA documents can be found in Module 14A.

The Hazard Communication Standard applies to any chemical that is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency [29 CFR 1910.1200(b)(2)], not including:

- Any hazardous wastes subject to RCRA regulations [29 CFR 1910.1200(b)(b)(i)]; and
- Manufactured items that do not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use [29 CFR 1910.1200(b)(6)(iv) and (c)].

Note: The Hazardous Communication Standard would apply to some PCB waste and non-waste materials. It would not apply to PCBs contaminated with RCRA hazardous wastes, however.

Under the Hazard Communication Standard, employers, such as DOE, are required to do the following:

- Conduct a **hazard determination** in accordance with 29 CFR 1910.1200(d). Available scientific evidence concerning health hazards, as defined at 29 CFR 1910.1200(c), must be identified and considered for the determination. A hazardous determination previously performed to satisfy this requirement may be used, if desired.
- Prepare a list of all hazardous chemicals used or stored on-site [29 CFR 1910.1200(e)(1)(i)].
- Obtain and make available to employees a **Material Safety Data Sheet** (MSDS) for each of these hazardous chemicals [29 CFR 1910.1200(g)]. *Note that the MSDS may also be used to satisfy one of the requirements of the DOT Emergency Response Communication Standard [49 CFR 172.602] and one of the requirements of Section 311 of the Emergency Planning and Community Right-to-Know Act discussed in Section 14.5.*
- Establish and maintain a written **hazard communication program** to inform all employees about the potential risks of these chemicals and appropriate protective measures [29 CFR 1910.1200(e)(1)].
- Provide hazard communication **training** on the chemicals present in the workplace to all potentially exposed workers at the time of their initial employment and whenever a new hazard enters the workplace [29 CFR 1910.1200(h)(2)]. *This training can be incorporated into the training conducted to meet the HAZWOPER requirements for operations covered by that regulation.*
- **Label** containers that store hazardous chemicals (including PCBs) [29 CFR 1910.1200(f)]. *OSHA requires that the label include the name of the hazardous chemical, the identity and address of the manufacturer or the party responsible for the hazardous chemical, and the principal hazards from the chemical. Note that the EPA marks described in Chapter 6, "Marking," do not satisfy the OSHA requirement.*

14.5 MODULE 14C: EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

To ensure that you are in the correct module, the box below provides a reminder of the decision paths you should have taken in the Master Flow Chart in Section 14.2 to arrive at Module 14C.

Reminder

PCB Activities → Site cleanup operations → Module 14A → Module 14B → Module 14C

PCB Activities → Hazardous waste operations → Module 14A → Module 14B → Module 14C

PCB Activities → Emergency response → Module 14A → Module 14B → Module 14C

PCB Activities → HAZWOPER does not apply → Module 14B → Module 14C

The Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), also known as Title III of the Superfund Amendments and Reauthorization Act (SARA), was designed to increase public knowledge and access to information concerning the presence of hazardous chemicals, including PCBs, and the releases of these chemicals into the environment. The regulatory requirements implementing EPCRA are found at 40 CFR Parts 350-372.

Compliance with EPCRA is required by Executive Order 12586 (58 *Federal Register* 41981).

DOE's Office of Environmental Guidance has published a guidance document, "Emergency Planning and Community Right-To-Know Act (EPCRA)" (USDOE 1991), which describes the requirements of this act using a graphical approach. A copy can be obtained by contacting the DOE Office of Science and Technical Information at (615) 576-8401 or (615) 576-1301.

When using the above guidance, the following points should be kept in mind with regard to PCBs:

- The emergency planning requirements described in EPCRA Sections 301-303 apply to a facility at which an extremely hazardous substance is present in excess of the threshold planning quantity (TPQ) set for that substance. PCBs have not been designated an extremely hazardous substance. Thus, if PCBs are the only substance present at a facility, the facility is not required to report to the appropriate State Emergency Response Commission (SERC); nor would it be required to designate and identify a facility emergency response coordinator to the Local Emergency Planning Committee (LEPC).
- EPCRA Section 304 covers emergency reporting of releases. Because PCBs are a hazardous substance designated under Section 102 of CERCLA, the reporting requirements of Section 304 of EPCRA apply to PCBs. For details on the required reporting, see Section 12.2.2, "Spill Notification Requirements" of this manual.
- EPCRA Section 311 requires facilities that are required by OSHA's Hazard Communication Standard to generate or maintain a Material Safety Data Sheet (MSDS) for any "hazardous chemical" (including PCBs) to provide a copy of each MSDS or a list of the substances for which the facility has an MSDS to the LEPC, the SERC, and the fire department with jurisdiction over the facility. These submissions are required if the quantity of any hazardous chemical present (including PCBs) equals or exceeds 10,000 pounds. Facilities subject to Section 311 are automatically subject to the reporting requirements under EPCRA Section 312. Consult the EPCRA guidance manual for further details on how to comply with these requirements.
- EPCRA Section 313 covers the Toxic Chemical Release Inventory Report. Commercial facilities with 10 or more full-time employees, that conduct activities described by Standard Industrial Classification (SIC) Codes 20-39, and that manufacture, process, or otherwise use a toxic chemical in excess of the established reporting thresholds must submit annually EPA Form R, which describes releases of toxic chemicals to the environment. Federal agencies must comply with these provisions of EPCRA Section 313 without regard to the SIC delineations that apply to their facilities [E.O. 12856, §3-304(b)].

PCBs have been designated a toxic substance subject to Section 313. For details on the reporting requirements, consult the EPCRA guidance manual.

In addition to the EPCRA guidance manual, DOE Personnel can contact the EPA EPCRA Hotline for assistance. EPA publishes an easy-to-read 8-page summary of EPCRA entitled "SARA Title III Fact Sheet" (USEPA 1993) available from the hotline. See Appendix D for the hotline phone number and hours of operation.

14.6 REFERENCES

HAZWOPER Fact sheet: Establishing work zones at uncontrolled hazardous waste sites. Pub. No. 9285.2-06FS.

HAZWOPER Fact sheet: Hazardous waste operations and emergency response: available guidance. Pub. No. 9285.2-10FS.

HAZWOPER Fact sheet: Hazardous waste operations and emergency response: General information and comparison. Pub. No. 9285.2-09FS.

HAZWOPER Fact sheet: Hazardous waste operations and emergency response: RCRA TSD and emergency response without regard to location. Pub. No. 9285.2-07FS.

HAZWOPER Fact sheet: Hazardous waste operations and emergency response: Uncontrolled hazardous waste sites and RCRA corrective actions. Pub. No. 9285.2-08FS.

NIOSH. 1977. Criteria for a recommended standard...occupational exposure to polychlorinated biphenyls (PCBs). Washington, DC: National Institute for Occupational Safety and Health. NIOSH-77-225. 1977.

USDOE. 1991. Emergency Planning and Community Right-to-Know Act (EPCRA). Washington, DC: U.S. Department of Energy. Office of Environmental Safety and Health, Office of Environmental Guidance, RCRA/CERCLA Division (EH-231). DOE/EH-0181P. March 1991.

USEPA. 1993. SARA Title III Fact Sheet. Washington, DC: U.S. Environmental Protection Agency. Office of Solid Waste and Emergency Response (OS-120). EPA 550-F-93-002. Series 9, No. 3. January 1993.

GLOSSARY

Unless otherwise noted, the definitions in this glossary are based on the regulatory definitions found at 40 CFR 761.3 and 40 CFR 761.123. The language used in the definition has been simplified in many cases to assist the reader, but only to the extent that the intended meaning of the term as used in the regulations is preserved. Italics are used to indicate DOE's interpretations of the meaning of certain terms, as described on p. 1-10.

**Alternative
disposal method**

Any person who is required to incinerate any PCBs and PCB Items and who can demonstrate that:

- An alternative method of destroying PCBs and PCB Items exists and
- This alternative method can achieve a level of performance equivalent to a TSCA incinerator or high efficiency boiler

may submit a written request to either the EPA Regional Administrator or the Director of the EPA Exposure Evaluation Division for an exemption from the incineration requirements of 40 CFR 761.70 or 40 CFR 761.60(a)(3)(iii).

The alternative disposal method:

- Must provide PCB destruction equivalent to disposal in a TSCA incinerator approved under 40 CFR 761.70 or a high efficiency boiler meeting the requirements of 40 CFR 761.60(a)(3)(iii),
- Must not present an unreasonable risk of injury to health or the environment,
- Must be approved in writing by the EPA Regional Administrator or Director of the Exposure Evaluation Division, and
- Must be operated in compliance with any conditions and limitations contained in the approval.

Refer to 40 CFR 761.60(e) for details.

Annual document log	The detailed information maintained at a facility on PCB waste handling at the facility.
Annual report	The written document submitted each year by each disposer and commercial storer of PCB waste to the appropriate EPA Regional Administrator. The annual report is a brief summary of the information included in the annual document log.
Byproduct	A chemical substance produced without separate commercial intent during the manufacturing or processing of another chemical substance or mixture.
Capacitor	<p>A device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Capacitors are classified under 40 CFR Part 761 according to the weight of dielectric fluid contained in the capacitor. The following assumptions may be used if the actual weight of the dielectric fluid is unknown:</p> <ul style="list-style-type: none">• A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kgs (3 lbs.) of dielectric fluid.• A capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid.• A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.). <p>See also: Small Capacitor, Large High-voltage Capacitor, and Large Low-voltage Capacitor.</p>
Certificate of Disposal	A Certificate of Disposal is a document generated by the disposer of PCB waste for PCBs and PCB Items disposed of at the facility. The Certificate of Disposal must include information identifying the disposal facility, a reference to the manifest number and other information identifying the waste disposed of, a statement certifying the disposal of the PCB waste and identifying the date and process used, and a certification [40 CFR Part 761.218].

Certification

A written statement regarding a specific fact or representation that contains the following language: Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

Chemical substance

Any organic or inorganic substance of a particular molecular identity, including any combination of such substances occurring in whole or part as a result of a chemical reaction or occurring in nature, and any element or uncombined radical. The term does *not* include:

- Any mixture;
- Any pesticide (as defined in the Federal Insecticide, Fungicide, and Rodenticide Act) when manufactured, processed, or distributed in commerce for use as a pesticide;
- Tobacco or any tobacco product;
- Any source material, special nuclear material, or byproduct material (as such terms are defined in the Atomic Energy Act of 1954 and regulations issued under such Act);
- Any article the sale of which is subject to the tax imposed by section 4181 of the Internal Revenue Code of 1954 (determined without regard to any exemptions from such tax provided by section 4182 or section 4221 or any provisions of such Code); and
- Any food, food additive, drug, cosmetic, or device (as such terms are defined in section 201 of the Federal Food, Drug, and Cosmetic Act) when manufactured, processed, or distributed in commerce for use as a food, food additive, drug, cosmetic, or device.

Chemical waste landfill

A landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in 40 CFR 761.75.

Commerce	<p>(1) Trade, traffic, transportation, or other commerce between a place in a state and any place outside of such state, or</p> <p>(2) Trade, traffic, transportation, or other commerce that affects commerce as defined in (1), above.</p>
Commercial area	An area where people work in other than manufacturing or farming industries. Commercial areas are typically accessible to members of the general public and to employees and include public assembly properties, institutional properties, stores, office buildings, and transportation centers.
Commercial storer of PCB waste	Any facility subject to the standards of 40 CFR 761.65 that (1) stores PCB waste generated by others or (2) removed PCB waste while servicing equipment owned by others would qualify the owner or operator as a commercial storer; the receipt of a fee or any form of compensation for storage services is not necessary to qualify as a commercial storer of PCB waste. <i>A DOE facility that receives < 500 gallons of PCB waste generated by sources other than DOE is not required to seek approval as a commercial storer.</i>
Conditionally exempt small quantity generator	According to the RCRA regulations at 40 CFR 261.5(a), a generator of RCRA hazardous waste is a conditionally exempt small quantity generator when no more than 100 kg of hazardous waste is generated in a calendar month.
Decontamination	The PCB regulations at 40 CFR Part 761 currently do not include a definition of decontamination; however, decontamination procedures for PCB Containers and movable equipment used in PCB storage areas are described at 40 CFR 761.79, and requirements for decontaminating spill areas may be found at 40 CFR 761.125(b)(1), (c)(2), (c)(3), and (c)(4). See Chapter 7, "Storage"; Chapter 9, "Disposal"; and Chapter 12, "Spill Reporting and Cleanup" for details.
Designated facility	The off-site disposer or commercial storer of PCB waste designated on the manifest as the facility that will receive a manifested shipment of PCB waste.
Disposal	Intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.

Disposer of PCB waste	Any person who owns or operates a facility approved by EPA for the disposal of PCB waste that is regulated for disposal under the requirements of Subpart D of 40 CFR Part 761.
Distribute in commerce	(1) To sell a chemical substance, mixture, or article in commerce, when used to describe an action taken with respect to the substance, mixture, or article containing a substance or mixture; (2) to introduce or deliver for introduction into commerce the substance, mixture, or article; or (3) to hold the substance, mixture, or article after its introduction into commerce.
Double wash/rinse	A minimum requirement to cleanse solid surfaces (both impervious and nonimpervious) two times with an appropriate solvent or other material in which PCBs are at least five percent soluble (by weight). A volume of PCB-free fluid sufficient to cover the contaminated surface completely must be used in each wash/rinse. The wash/rinse requirement does not mean the mere spreading of solvent or other fluid over the surface, nor does the requirement mean a once-over wipe with a soaked cloth. Precautions must be taken to contain any runoff resulting from the cleansing and to dispose properly of wastes generated during the cleansing.
Electrical equipment	See definition for PCB Electrical Equipment.
Emergency situation	An emergency situation for continuing use of a PCB transformer exists when: (1) neither a non-PCB Transformer nor a PCB-contaminated Transformer is currently in storage for reuse or readily available (i.e., available within 24 hours) for installation, or (2) immediate replacement is necessary to continue service to power users.
EPA identification number	The 12-digit number assigned to a facility by EPA upon notification of PCB waste activity under 40 CFR 761.205.

Excluded manufacturing process

A manufacturing process that inadvertently generates PCBs and from which releases of inadvertently generated PCBs to products, air, and water meet the requirements of paragraphs (1) through (5) of this definition, or the importation of products that meet the requirements of paragraphs (1) and (2) of this definition and that contain PCBs as unintentional impurities.

- (1) The concentration of inadvertently generated PCBs in products leaving any manufacturing site or imported into the United States must have an annual average of less than 25 ppm, with a 50 ppm maximum.
- (2) The concentration of inadvertently generated PCBs in the components of detergent bars leaving the manufacturing site or imported into the United States must be less than 5 ppm.
- (3) The release of inadvertently generated PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.
- (4) The amount of inadvertently generated PCBs added to water discharged from a manufacturing site must be less than 100 micrograms per resolvable gas chromatographic peak per liter of water discharged.
- (5) Disposal of any other process wastes above concentrations of 50 ppm PCBs must be in accordance with Subpart D of 40 CFR Part 761.

Excluded PCB products

PCB materials that appear at concentrations less than 50 ppm, including but not limited to:

- (1) Non-Aroclor inadvertently generated PCBs as a byproduct or impurity resulting from a chemical manufacturing process;
- (2) Products contaminated with Aroclor or other PCB materials from historic PCB uses (e.g., investment casting waxes);
- (3) Recycled fluids and/or equipment contaminated during use involving the products described in paragraphs (1) and (2) of this definition (e.g., heat transfer and hydraulic fluids and equipment and other electrical equipment components and fluids); and
- (4) Used oils

provided that:

- The products or source of the products containing < 50 ppm PCBs were legally manufactured, processed, distributed in commerce, or used before October 1, 1984; or
- After October 1, 1984, the products or source of the products containing < 50 ppm PCBs were legally manufactured, processed, distributed in commerce, or used pursuant to authority granted by EPA regulation, by exemption petition, by settlement agreement, or pursuant to other Agency-approved programs; and
- The resulting PCB concentration (i.e., below 50 ppm) is not a result of dilution, or leaks and spills of PCBs in concentrations over 50 ppm.

Fluorescent light ballast

A device that electrically controls fluorescent light fixtures and that includes a capacitor containing 0.1 kg or less of dielectric fluid.

Generator of PCB waste

Any person:

- Whose act or process produces PCBs that are regulated for disposal under Subpart D of 40 CFR Part 761, or
- Whose act first causes PCBs or PCB Items to become subject to the disposal requirements of Subpart D of 40 CFR Part 761, or
- Who has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated and therefore the PCBs are subject to the disposal requirements of Subpart D of 40 CFR Part 761.

Unless another provision of this part specifically requires a site-specific meaning, "generator of PCB waste" includes all of the sites of PCB waste generation owned or operated by generator.

High-concentration PCBs

PCBs that contain 500 ppm or more PCBs, or those materials that EPA requires to be assumed to contain 500 ppm or more PCBs in the absence of testing (e.g., dielectric fluid containing less than 500 ppm PCBs that is mixed with fluid that contains 500 ppm or more PCBs).

High-contact industrial surface

A surface in an industrial setting that is repeatedly touched, often for relatively long periods of time. Manned machinery and control panels are examples of high-contact industrial surfaces. High-contact industrial surfaces are generally of impervious solid material. Examples of low-contact industrial surfaces include ceilings, walls, floors, roofs, roadways and sidewalks in the industrial area, utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components, indoor vaults, and pipes.

High-contact residential/commercial surface

A surface in a residential/commercial area that is repeatedly touched, often for relatively long periods of time. Doors, wall areas below six feet in height, uncovered flooring, windowsills, fencing, bannisters, stairs, automobiles, and children's play areas such as outdoor patios and sidewalks are examples of high-contact residential/commercial surfaces. Examples of low-contact residential/commercial surfaces include interior ceilings, interior wall areas above six feet in height, roofs, asphalt roadways, concrete roadways, wooden utility poles, unmanned machinery, concrete pads beneath electrical equipment, curbing, exterior structural building components (e.g., aluminum/vinyl siding, cinder block, asphalt tiles), and pipes.

Impervious solid surfaces

Solid surfaces that are nonporous and thus unlikely to absorb spilled PCBs within the short period of time required for cleanup of spills under this policy. Impervious solid surfaces include, but are not limited to, metals, glass, aluminum siding, and enameled or laminated surfaces.

Impurity

A chemical substance that is unintentionally present with another chemical substance.

Inadvertently generated PCBs

Inadvertently generated non-Aroclor PCBs are defined as the total quantity of monochlorinated biphenyls divided by 50 plus the total quantity of dichlorinated biphenyls divided by five.

In or near commercial buildings	Within the interior of, on the roof of, attached to the exterior wall of, in the parking area serving, or within 30 meters of a non-industrial non-substation building. Commercial buildings are typically accessible to both members of the general public and employees, and include: public assembly properties, educational properties, institutional properties, residential properties, stores, office buildings, and transportation centers (e.g., airport terminal buildings, subway stations, bus stations, or train stations).
Incinerator	An engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.
Industrial building	A building directly used in manufacturing or technically productive enterprises. Industrial buildings are generally or typically accessible only to workers. Industrial buildings include buildings used directly in the production of power, the manufacture of products, the mining of raw materials, and the storage of textiles, petroleum products, wood and paper products, chemicals, plastics, and metals.
Large High-voltage Capacitor	A capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and that operates at or above 2,000 volts (a.c. or d.c.).
Large Low-voltage Capacitor	A capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and that operates below 2,000 volts (a.c. or d.c.).
Leak or leaking	Any instance in which a PCB Article, PCB Container, or PCB Equipment has any PCBs on any portion of its external surface.
Low-concentration PCBs	PCBs that are tested and found to contain less than 500 ppm PCBs, or those PCB-containing materials that EPA requires to be assumed to be at concentrations less than 500 ppm (e.g., untested mineral oil dielectric fluid).
Manifest	The shipping document (EPA form 8700-22 and any continuation sheet attached to EPA form 8700-22) originated and signed by the generator of PCB waste in accordance with the instructions included with the document and Subpart K of 40 CFR Part 761.

Manned control center	An electrical power distribution control room where the operating conditions of a PCB transformer are continuously monitored during the normal hours of operation (of the facility) and where the duty engineers, electricians, or other trained personnel have the capability to deenergize a PCB transformer completely within one minute of the receipt of a signal indicating abnormal operating conditions such as an overtemperature condition or overpressure condition in a PCB transformer.
Manufacture	To produce, manufacture, or import into the customs territory of the United States.
Manufacturing process	All of a series of unit operations operating at a site, resulting in the production of a product.
Mark	The descriptive name, instructions, cautions, or other information applied to PCBs and PCB Items, or other objects subject to these regulations.
Marked	The marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, affixing an adhesive label, or by any other method that meets the requirements of 40 CFR Part 761.
Mineral Oil PCB Transformer	Any transformer originally designed to contain mineral oil as the dielectric fluid and that has been tested and found to contain 500 ppm or more PCBs.
Mixture	<p>Any combination of two or more chemical substances if the combination does not occur in nature and is not the result of a chemical reaction, with the following exception. A combination that occurs as a result of a chemical reaction is a mixture if:</p> <ul style="list-style-type: none">• The combination could have been manufactured for commercial purposes without a chemical reaction taking place when the substances were combined; and• None of the chemical substances constituting the mixture are new chemical substances (i.e., introduced subsequent to manufacture).
Municipal solid wastes	Garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.

Network Transformer	A power and/or distribution transformer designed for use in a vault to feed a variable capacity system of interconnected secondaries. A network transformer usually has a provision for a network protector (i.e., a circuit breaker and automatic control equipment for automatically disconnecting the transformer).
Nonimpervious solid surfaces	Solid surfaces that are porous and are more likely to absorb spilled PCBs prior to completion of the cleanup requirements prescribed in this policy. Nonimpervious solid surfaces include, but are not limited to, wood, concrete, asphalt, and plasterboard.
Non-PCB Transformer	Any transformer that contains less than 50 ppm PCBs; except that any transformer that has been converted from a PCB Transformer or a PCB-contaminated Transformer cannot be classified as a non-PCB Transformer until reclassification has occurred, in accordance with the requirements of 40 CFR 761.30(a)(2)(v).
Nonrestricted access areas	Any area other than restricted access locations and outdoor electrical substations. These areas include residential/commercial areas and unrestricted access rural areas (areas of low-density development and population where access is uncontrolled by either man-made barriers or naturally occurring barriers, such as rough terrain, mountains, or cliffs).
Off-specification	Does not meet the specification at 40 CFR 279.11 for used oil.
On-site	Within the boundaries of a contiguous property unit [40 CFR Part 761.3].
Other restricted access location	See "restricted access (nonsubstation) area."
Outdoor electrical substations	Outdoor, fenced, and restricted access areas used in the transmission and/or distribution of electrical power. Outdoor electrical substations restrict public access by being fenced or walled as defined under 40 CFR 761.30(l)(1)(ii). For the purposes of 40 CFR Part 761, outdoor electrical substations are defined as being located 0.1 km or more from a residential/commercial area. Outdoor fenced and restricted access areas used in the transmission and/or distribution of electrical power that are located less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.

PCB and PCBs	Any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances that contains such substance.
PCB Article	<p>Any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) <i>has</i> been in direct contact with PCBs, including: capacitors, transformers, electric motors, pumps, pipes, and any other manufactured item:</p> <ol style="list-style-type: none">(1) Which is formed to a specific shape or design during manufacture,(2) Which has end use function(s) dependent in whole or in part upon its shape or design during end use, and(3) Which has either no change of chemical composition during its end use or only those changes of composition that have no commercial purpose separate from that of the PCB Article.
PCB Article Container	Any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) <i>has not</i> been in direct contact with PCBs.
PCB Container	Any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) <i>has</i> been in direct contact with PCBs.
PCB-Contaminated Electrical Equipment	Any PCB Electrical Equipment that contains PCBs at concentrations of ≥ 50 ppm but < 500 ppm.
PCB Electrical Equipment	<p>Any electrical equipment that contains PCBs, including but not limited to:</p> <ul style="list-style-type: none">• Transformers (including those used in railway locomotives and self-propelled cars),• Capacitors,• Circuit breakers,• Reclosers,• Voltage regulators,• Switches (including sectionalizers and motor starters),• Electromagnets, and• Cable.

PCB Electrical Equipment is a type of PCB Article. Note: This definition is based on the TSCA definition for PCB-contaminated Electrical Equipment at 40 CFR 761.3. Throughout the TSCA regulations at 40 CFR Part 761, the term "PCB-contaminated" is used to denote a PCB concentration of ≥ 50 ppm but < 500 ppm. This term "PCB Electrical Equipment" is used in this document to refer to a category of PCB Articles without limiting the PCB concentration to any particular range.

PCB Equipment	Any manufactured item, other than a PCB Container or a PCB Article Container whose surface <i>has not</i> been in direct contact with PCBs, that contains a PCB Article or other PCB Equipment, including: microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.
PCB Item	Any PCB Article, PCB Article Container, PCB Container, or PCB Equipment, that deliberately or unintentionally contains or has a part of it any PCB or PCBs.
PCB material	As used in this guidance, any material that contains a detectable level of PCBs either intentionally or accidentally, including all PCBs and PCB Items regardless of whether they are wastes or nonwastes.
PCB Transformer	Any transformer that contains 500 ppm PCBs or more.
PCB waste	40 CFR 761 defines PCB waste(s) as those PCBs and PCB Items that are subject to the disposal requirements of Subpart D of 40 CFR Part 761. For the purposes of this guidance, however, PCB waste means any PCB or PCB Item that is no longer in use or stored for use or reuse. This guidance addresses used oil burned for energy recovery separately from wastes and nonwastes.
Person	Any natural or judicial person including any individual, corporation, partnership, or association; any state or political subdivision thereof; any interstate body; and any department, agency, or instrumentality of the Federal Government [40 CFR 761.3].

Posing an exposure risk to food or feed

A PCB Item in any location where human food or animal feed products could be exposed to PCBs. A PCB Item poses an exposure risk to food or feed if PCBs released in any way from the PCB Item have a potential pathway to human food or animal feed. EPA considers human food or animal feed to include items regulated by the U.S. Department of Agriculture or the Food and Drug Administration as human food or animal feed; this includes direct additives. Food or feed is excluded from this definition if it is used or stored in private homes.

Processing

The preparation of a chemical substance or mixture, after its manufacture, for distribution in commerce:

(1) in the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such substance or mixture, or

(2) as part of an article containing the chemical substance or mixture.

Processing could be interpreted as formulating, adding liquids, diluting, servicing equipment, or even changing containers.

Qualified incinerator

One of the following:

(1) An incinerator approved under the provisions of 40 CFR 761.70. Any level of PCB concentration can be destroyed in an incinerator approved under 40 CFR 761.70.

(2) A high efficiency boiler that complies with the criteria of 40 CFR 761.60(a)(2)(iii)(A), and for which the operator has given written notice to the appropriate EPA Regional Administrator in accordance with the notification requirements for the burning of mineral oil dielectric fluid under 40 CFR 761.60(a)(2)(iii)(B).

(3) An incinerator approved under section 3005(c) of the Resource Conservation and Recovery Act (42 U.S.C. 6925(c)) (RCRA).

(4) Industrial furnaces and boilers that are identified in 40 CFR 260.10 and 40 CFR Part 279, Subpart G, when operating at their normal operating temperatures. When the specified industrial furnaces and boilers are not operating at their normal operating temperatures (i.e., during either startup or shutdown operations) feeding fluids above the level of detection is prohibited.

Quantifiable level/level of detection	Two micrograms per gram from any resolvable gas chromatographic peak, i.e., 2 ppm.
Radial Transformer	More commonly known as a radial feeder, this transformer supplies electric energy to a substation or a feed point that receives energy by no other means (i.e., the transformer has one connection to a central source).
Recycled PCBs	<p>Those PCBs that appear in the processing of paper products or asphalt roofing materials from PCB-contaminated raw materials. Processes that recycle PCBs must meet the following requirements:</p> <ol style="list-style-type: none">(1) There are no detectable concentrations of PCBs in asphalt roofing material products leaving the processing site.(2) The concentration of PCBs in paper products leaving any manufacturing site processing paper products, or in paper products imported into the United States, must have an annual average of less than 25 ppm with a 50 ppm maximum.(3) The release of PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.(4) The amount of Aroclor PCBs added to water discharged from an asphalt roofing processing site must at all times be less than three micrograms per liter (micro-g/L) for total Aroclors (roughly three parts per billion (3 ppb)). Water discharges from the processing of paper products must at all times be less than three micrograms per liter (micro-g/L) for total Aroclors (roughly 3 ppb), or comply with the equivalent mass-based limitation.(5) Disposal of any other process wastes at concentrations of 50 ppm or more must be in accordance with Subpart D of 40 CFR Part 761. <p><i>Recycling does not include reusing PCB dielectric fluid in PCB Electrical Equipment such as transformers.</i></p>
Requirements	Both the procedural responses and numerical decontamination levels set forth in Subpart G of 40 CFR Part 761 as constituting adequate cleanup of PCBs.

Residential area	An area where people live or reside. Residential areas include housing and the property on which housing is located, as well as playgrounds, roadways, sidewalks, parks, and other similar areas within a residential community.
Responsible party	The owner of the PCB Equipment, facility, or other source of PCBs or his/her designated agent (e.g., a facility manager or foreman).
Restricted access (nonsubstation) areas	Areas other than electrical substations that are 0.1 km or more from a residential/commercial area where access is limited by man-made barriers (e.g., fences and walls) or naturally occurring barriers (e.g., mountains, cliffs, or rough terrain). These areas generally include industrial facilities and extremely remote rural locations. (Areas where access is restricted but are less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.)
Retrofill	To remove PCB or PCB-contaminated dielectric fluid and to replace it with either PCB, PCB-contaminated, or non-PCB dielectric fluid.
Rupture of a PCB transformer	A violent or non-violent break in the integrity of a PCB transformer caused by an overtemperature and/or overpressure condition that results in the release of PCBs.
Sale for purposes other than resale	Sale of PCBs for purposes of disposal and for purposes of use, except where use involves resale (i.e., sale for distribution in commerce). PCB Equipment that is first leased for purposes of use any time before July 1, 1979, will be considered sold for purposes other than resale.
Small Capacitor	A capacitor that contains less than 1.36 kg (3 lbs.) of dielectric fluid.
Small quantities for research and development	Any quantity of PCBs that is originally packaged in one or more hermetically sealed containers of a volume of no more than five milliliters (5.0 ml) and is used only for purposes of scientific experimentation or analysis, or chemical research on, or analysis of, PCBs, but not for research or analysis for the development of a PCB product.
Small quantity generator	A small quantity generator is defined at 40 CFR 260.10 as a generator who generates < 1,000 kilograms of hazardous waste in a calendar month. See also "conditionally exempt small quantity generator."
Soil	All vegetation, soils and other ground media, including but not limited to, sand, grass, gravel, and oyster shells. It does not include concrete and asphalt.

Specification	Allowable levels of constituents in used oil described at 40 CFR 279.11.
Spill	Both intentional and unintentional spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases.
Spill area	The area of soil on which visible traces of the spill can be observed plus a buffer zone of one foot beyond the visible traces. Any surface or object (e.g., concrete sidewalk or automobile) within the visible traces area or on which visible traces of the spilled material are observed is included in the spill area. This area represents the minimum area assumed to be contaminated by PCBs in the absence of precleanup sampling data and is thus the minimum area that must be cleaned.
Spill boundaries	The actual area of contamination as determined by postcleanup verification sampling or by precleanup sampling to determine actual spill boundaries. EPA can require additional cleanup when necessary to decontaminate all areas within the spill boundaries to the levels required in Subpart G of 40 CFR Part 761 (e.g., additional cleanup will be required if postcleanup sampling indicates that the area decontaminated by the responsible party, such as the spill area as defined in this section, did not encompass the actual boundaries of PCB contamination).
Standards	The numerical decontamination levels set forth in Subpart G of 40 CFR Part 761.
Standard wipe test	Verifies, for spills of high-concentration PCBs on solid surfaces, that a cleanup to numerical surface standards has occurred. This definition constitutes the minimum requirements for an appropriate wipe testing protocol. A standard-size template (10 cm x 10 cm) will be used to delineate the area of cleanup; the wiping medium will be a gauze pad or glass wool of known size that has been saturated with hexane. It is important that the wipe be performed very quickly after the hexane is exposed to air. EPA strongly recommends that the gauze (or glass wool) be prepared with hexane in the laboratory and that the wiping medium be stored in sealed glass vials until it is used for the wipe test.
Storage for disposal	Storage of PCBs that have been designated for disposal.

Temporary Storage	Storage in an area that does not meet the TSCA requirements at 40 CFR 761.65(b) for a TSCA storage facility for 30 days or less from the date of removal from service [40 CFR Part 761.65(c)(1)].
Totally enclosed manner	Any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs.
Transfer facility	Any transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during the normal course of transportation. Transport vehicles are not transfer facilities under this definition, unless they are used for the storage of PCB waste, rather than for actual transport activities. Storage areas for PCB waste at transfer facilities are subject to the storage facility standards of 40 CFR 761.65, but such storage areas are exempt from the approval requirements of 40 CFR 761.65(d) and the recordkeeping requirements of 40 CFR 761.180, unless the same PCB waste is stored there for a period of more than ten consecutive days between destinations.
Transporter of PCB waste	Any person engaged in the transportation of regulated PCB waste by air, rail, highway, or water for purposes other than consolidation by a generator.
Transport vehicle	A motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.
Used oil	Any oil that has been refined from crude oil or any synthetic oil, if the oil has been used and contaminated by physical or chemical impurities as a result of such use [40 CFR 279.1].
Used oil fuel	Used oil burned as fuel according to the regulations at 40 CFR Part 279 for the purposes of energy recovery.
Used oil burner	A facility where used oil that does not meet the specification requirements at 40 CFR 279.11 is burned for energy recovery in industrial furnaces, boilers, or hazardous waste incinerators subject to 40 CFR 279.61 [40 CFR 279.1].
Used oil fuel marketer	A marketer who directs a shipment of off-specification used oil from their facility to a used oil burner or first claims that used oil that is to be burned for energy recovery meets the specification set forth at 40 CFR 279.11 [40 CFR 279.1].

**Used oil
generator**

Any site whose act or process produces used oil or whose first act causes used oil to become subject to regulation [40 CFR 279.1].

Waste oil

Used products primarily derived from petroleum, that include, but are not limited to: fuel oils, motor oils, gear oils, cutting oils transmission fluids, hydraulic fluids, and dielectric fluids.

APPENDIX A

STATE PCB PROGRAMS

The U.S. Environmental Protection Agency's Office of Toxic Substances has collected information regarding state programs and activities relative to the management of PCBs. This information has been compiled in a report, "Summary of State PCB Programs," published in February 1991, which summarizes the findings of a telephone survey administered to officials in all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands during the months of September and October 1990.

A portion of the above report is reproduced here. Table 1 presents the types of activities the states reported. Table 2 presents state-specific PCB management requirements.

The report included a disclaimer that has been reproduced in the box below.

DISCLAIMER

THIS REPORT IS A COMPILATION OF RESPONSES OF INDIVIDUAL STATE OFFICIALS TO SPECIFIC QUESTIONS CONCERNING THEIR STATE'S PCB PROGRAM. IT SHOULD NOT BE RELIED UPON TO DETERMINE WHAT, IF ANY, REQUIREMENTS A PARTICULAR STATE MAY CURRENTLY BE IMPOSING. THE REPORT SHOULD BE USED AS A REFERENCE FROM WHICH TO BEGIN THE PROCESS OF DETERMINING INDIVIDUAL STATE REQUIREMENTS FOR THE MANAGEMENT OF PCBs.

For a complete copy of this report, contact EPA's TSCA Hotline at (202) 554-1404.

Table 1
State PCB Activities

State	PCBs in use	Transport	Disposal	Site Cleanup (e.g. State Superfund)	Spill Cleanup	Grant Recipient
Alabama						
Alaska		Yes	Yes	Yes	Yes	
Arizona		Yes		Yes	Yes	
Arkansas		Yes				
California	Yes	Yes	Yes	Yes		Yes
Colorado						
Connecticut	Yes	Yes	Yes	Yes	Yes	Yes
Delaware		Yes			Yes	
Florida						
Georgia					Yes	
Hawaii						
Idaho		Yes				
Illinois	Yes	Yes	Yes	Yes	Yes	Yes
Indiana	Yes		Yes	Yes	Yes	
Iowa	Yes					Yes
Kansas	Yes		Yes			Yes
Kentucky	Yes				Yes	Yes
Louisiana						
Maine		Yes			Yes	
Maryland	Yes	Yes	Yes	Yes	Yes	Yes
Massachusetts		Yes	Yes	Yes	Yes	
Michigan	Yes	Yes	Yes	Yes	Yes	Yes
Minnesota	Yes	Yes	Yes	Yes	Yes	Yes
Mississippi	Yes			Yes		
Missouri	Yes	Yes	Yes	Yes		Yes
Montana						
Nebraska						
Nevada		Yes	Yes		Yes	
New Hampshire	Yes					Yes
New Jersey		Yes	Yes	Yes	Yes	
New Mexico	Yes				Yes	Yes
New York		Yes	Yes	Yes	Yes	
North Carolina						
North Dakota	Yes					Yes
Ohio	Yes	Yes				Yes
Oklahoma					Yes	
Oregon		Yes	Yes	Yes	Yes	
Pennsylvania			Yes	Yes		
Rhode Island		Yes	Yes	Yes	Yes	
South Carolina					Yes	
South Dakota	Yes	Yes	Yes	Yes	Yes	
Tennessee						
Texas	Yes		Yes		Yes	Yes
Utah						
Vermont	Yes	Yes	Yes	Yes	Yes	
Virginia		Yes	Yes	Yes		
Washington	Yes		Yes	Yes	Yes	Yes
West Virginia						
Wisconsin		Yes	Yes	Yes	Yes	
Wyoming			Yes			
District of Columbia						
Puerto Rico	Yes					Yes
Virgin Islands		Yes			Yes	
Totals:	21	25	24	22	27	17

• "Yes" indicates that state undertakes at least one PCB management activity which may be classified under this heading.

Table 2
State PCB Requirements

State	Activity	Requirement	Authority
AL	No State Activities	All requirements defer to TSCA.	TSCA
AK	Transport	Manifest required by Hazardous Waste Tracking Program.	Title 18 Alaska Administrative Code - Chapter 60.095 Section F.
	Disposal	For waste with less than 50 ppm PCBs, waste must go to Hazardous Waste Management Facilities. Operator must meet siting rules.	
	Site Cleanup	Managed on site specific basis by State Superfund.	
	Spill Cleanup	Treated under general and emergency spill procedures.	
AZ	Transport	Permits are required for transport of off specification oil with greater than 2 ppm PCBs.	Arizona Revised Statutes. Title 49. Adopts federal rules by reference. Title 13 of the Arizona Administrative code. Gives authority for Title 49.
	Site Cleanup	Cleanup of contaminated PCB sites are regulated by the state Superfund.	
	Spill Cleanup	A permit is required for spill cleanup.	
	Other	Arizona requires a permit for companies emitting PCBs, and solid waste and aquifer protection permits are also required where PCBs are involved.	
AR	Transport	Transported PCBs are treated as hazardous waste under Arkansas regulations.	Arkansas Hazardous Waste Code - Section 16.

Table 2 (continued)

CA	I.D./Inspection	CA has an EPA enforcement grant for CA Region 4 (southern counties), where inspections are done by state officials.	CA Hazardous Waste Codes Title 22, Section 6680-67780; Title 23
	Transport	A CA Hazardous Waste Manifest is required once PCBs are destined for disposal. A TSD permit is required for storage over 60 days.	
	Disposal	Landfill and other treaters need state TSD permits.	
	Site Cleanup	Cleanup of PCB contaminated sites proceeds under state Superfund. The state superfund parallels most of the requirements of CERCLA. State regions dictate what cleanup levels are required.	
CO	No State Activities	All state requirements defer to TSCA.	TSCA.
CT	ID/Inspection	CT is an enforcement grant state.	State Hazardous Waste Statutes Chapter 445, Section 22A, 117, 454, 463-469A. These statutes define PCBs as a regulated waste and provide the authority for permitting.
	In use	Monitored by CT to be in compliance with TSCA rules.	
	Transport	Transport activities require a Federal permit if waste is contaminated with greater than 50 ppm PCBs, and the state recommends a RCRA transporter permit as well.	
	Disposal	Disposal activities of wastes less than 50 ppm PCBs abide by RCRA requirements. No disposal of wastes greater than 50 ppm occurs in state.	
	Site Cleanup	Cleanup activities must be managed in accord with both state and federal policies.	
	Spill Cleanup	Site specific basis.	
	Site Review	CT directs a site review which accounts for impacts on both people and water resources and promotes standards more stringent than TSCA.	

Table 2 (continued)

DE	Transport	Hauler must be permitted when carrying oil with PCBs. Delaware also requires that a provisional ID# be placed on the transformer for tracking purposes.	Delaware Natural Resources and Environmental Control Department - ad hoc policy.
	Spill Cleanup	For spill response and cleanup, the required actions of the regulated community are site specific.	
FL	Oversight	Biannual Hazardous Waste Report	Hazardous Waste Bureau Administrative priority.
GA	Spill Cleanup	No administrative requirements. GA manages cleanup of releases on a case by case basis.	Georgia Hazardous Waste Management Act.
HI	No State Activities	State defers to TSCA.	TSCA
ID	Transport	For waste with PCB concentrations of less than 50 ppm, haulers need a hazardous materials endorsement, which has an annual fee of \$5. For concentrations of greater than 50 ppm, haulers need a Hazardous Substance Trip Permit, at a cost of \$20 per haul.	Idaho Waste Management Act.
IL	ID/Inspection	Illinois is an enforcement grant state.	35 Illinois Code Section 6.07. These are solid waste regulations for Illinois Special Waste.
	Transport	For Illinois Special Waste (includes wastes with less than 50 ppm PCBs), the waste hauler must be specially licensed and obtain a manifest.	
	Disposal	Special Waste laws require that the facility receiving transported waste have a special waste permit. Additionally, a manifest is needed for disposal.	
	Site Cleanup	Cleanups must be approved by the Illinois EPA.	
	Spill Cleanup	Illinois has adopted U.S. EPA guidelines for its own spill cleanup policy.	

Table 2 (continued)

IN	In Use	IN regulates PCBs in railways and mines. PCBs in place require state approval and identification.	Indiana Environmental Management Act IC13-7 (Indiana State PCB rule 329 IAC 4)
	Disposal	Disposal requires an EPA like permit. If greater than 50 ppm, management falls under TSCA. If less than 50 ppm, the generator must approach the state and gain approval for disposal. If approval is not granted, the waste must be taken out of state. The entire process must be documented.	
	Site Cleanup	Cleanups are monitored under the authority of the State PCB rule and Environmental Management Act. Industrial sites must not exceed 5-10 ppm. Rural sites must not exceed 5 ppm, and residential areas must have no detectable PCBs in the top 6 inches of the soil zone.	
	Spill Cleanup	Spills are considered "improper disposal" and they are reviewed on a case by case basis. Cleanup of spills is regulated irrespective of concentration levels by the Environmental Management Act.	
IA	I.D./Inspection	IA is an enforcement grant state.	TSCA
KS	I.D./Inspection	KS is an enforcement grant state.	Kansas Statute Public Health Chapter 65, Article 34.
	Disposal	TSD facilities must obtain a Kansas operating permit.	
KY	I.D./Inspection	KY is an enforcement grant state.	KY Statute 224.
	Spill Cleanup	Spills of material containing more than 1 ppm PCBs are cleaned by the responsible party under the supervision of the Division of Waste Management. The Division of Water oversees cleanup of PCB spills that endanger the water supply.	

Table 2 (continued)

LA	No State Activities	State defers to TSCA.	All PCBs are listed as hazardous wastes in LA Administrative Code, Title 13, Volume 13, Chapter 49. All activity is deferred to TSCA.
ME	Transport	Transport of PCBs greater than 50 ppm requires a Maine Hazardous Waste Transporter Manifest.	Hazardous waste Statute MRSA Section 1301 etsq.
	Disposal	Although PCBs are treated as hazardous waste under the state RCRA program, there are no disposal requirements because there is no disposal activity in Maine.	
	Spill Cleanup	Cleanup requirements are site specific.	
MD	In Use/I.D.	Generator ID# is required by state. Commercial storers must have permit number.	Maryland RCRA.
	Transport	Manifest is required	
	Disposal	TSD facilities require a permit, and a manifest is required for waste headed for disposal. All PCB waste is shipped out of state in EPA approved haulers and disposed.	
	Site Cleanup	The procedure for cleanup of PCBs varies from site to site. If the source has a PCB level of 50 ppm or more, the state defers to TSCA. The state may require cleanup at lower concentrations.	
	Spill Cleanup	Site specific basis.	
MA	Transport	State RCRA permit is required.	Massachusetts General Law 21-C is the legislation under which PCBs are defined as a hazardous waste.
	Disposal	State RCRA hazardous waste Manifest is required.	
	Site Cleanup	Case by Case basis.	
	Spill Cleanup	Case specific review.	

Table 2 (continued)

MI	I.D./Inspection	Michigan is an enforcement grant state.	Act 60 - PCB Act Act 64 - Hazardous Waste Act (RCRA Type) Act 245 - Prohibition of contamination of groundwater.
	In Use	A generator ID# is required.	
	Transport	A manifest is required by State Act 60 for the transport of PCBs. To haul waste a RCRA or MIG# is required.	
	Disposal	Michigan regulates waste contaminated with less than 50 ppm PCBs.	
	Site Cleanup	Site by Site review.	
	Spill Cleanup	State Act 245 regulates the contamination of groundwater by PCBs.	
MN	In Use	For PCBs in place at concentrations greater than 500 ppm, a permit must be obtained under Certificate of Exemption program.	Minnesota Rules 70-45.
	I.D./Inspection	Minnesota is an enforcement grant state.	
	Removal	State requires a Hazardous Waste Management Disclosure license.	
	Transport	A manifest is required for transport. Hauler of PCBs must be licensed Hazardous Waste Carrier.	
	Disposal	Disposal is managed by Minnesota Hazardous Waste rules.	
	Site Cleanup	Minnesota has strict liability statutes for PCB contaminated sites. Cleanup is regulated under the state RCRA equivalent.	
MS	In Use	Mississippi monitors PCBs in use.	Broad DEQ Environmental Regulations.
	Disposal	Mississippi is debating regulations for disposal of PCB wastes in the 3-10 ppm range.	
	Site Cleanup	The state regulates PCBs which threaten groundwater, soil, or fish. The requirements vary according to the course of the remediation process.	

Table 2 (continued)

MO	I.D./Inspection	Missouri is an enforcement grant state.	Chapter 13, Missouri Hazardous Waste Management Law, Section 260.396
	Transport	PCB transport into Missouri or from commercial facility requires manifest and use of licensed hazardous waste transporter.	
	Disposal	Missouri and TSCA permits required.	
	Site Cleanup	Superfund approval.	
MT	No State Activities	State defers to TSCA	TSCA
NE	No State Activities	State defers to TSCA	TSCA
NV	Transport	Waste management manifests and highway patrol permits are required.	NAC 444940 - NAC 444955
	Disposal	Permits are required for TSD facilities. Financial assurance requirements must be met. Manifests for disposal also are required.	
	Spill Cleanup	Case specific review.	
NH	I.D./Inspection	NH is a grant enforcement state.	TSCA
	Disposal	For wastes with PCB concentrations below 50 ppm, disposal may take place at state approved boilers and incinerators. At the present time, no incinerators have state approval.	
NJ	Transport	NJ state law authorizes the distribution of federal permits/manifests for transport.	NJAC Annotated Code 7-26 Waste Management is a state umbrella regulation which covers all hazardous wastes.
	Disposal	NJ state law authorizes the distribution of federal permits/manifests for disposal.	
	Site/Spill Cleanup	Cleanup varies according to the situation. PCB cleanup can fit into one of the several different NJ cleanup programs.	
NM	I.D./Inspection	NM is an enforcement grant state.	TSCA
	Spill Activity	The Ground Water Bureau upholds a water quality standard of 1 ppm.	

Table 2 (continued)

NY	Transport	State manifest required.	New York Statute, Article 27, Title 9 of the Environmental Conservation Law.
	Disposal	Disposal only in authorized TSD facility; manifest also is required.	
	Site/Spill Cleanup	Required by Title 13 of the State Superfund. Corrective actions include fines and closures.	
NC	No State Activities	State defers to TSCA.	TSCA
ND	I.D./Inspection	ND is an enforcement grant state.	TSCA.
OH	I.D./Inspection	Ohio is an enforcement grant state.	Ohio hazardous waste regulations.
	Transport	PCB waste must be hauled by licensed hazardous waste haulers, with the exception of one time haulers. Additionally, a manifest is required for transport.	
OK	Spill cleanup	Infrequently covered under programmatic response program.	TSCA.
OR	Transport	Refers to TSCA.	ORS Chapter 468, including 468.020, ORS 466, including 466.020 and 466.505 to .530 and ORS 183.
	Disposal	Permits are required for disposal, and special permits are required for incineration of PCBs. In addition to TSCA rules, there are siting requirements which are more stringent than the federal program.	
	Site Cleanup	Handled by Environmental Cleanup Division.	
	Spill Cleanup	Case specific review.	
PA	Disposal	Permit modification is required to accept PCB waste in landfills.	Pennsylvania Waste Management Act (State Act 97)
	Site Cleanup	Liability requirements are in effect for the cleanup of PCBs in gas pipelines.	

Table 2 (continued)

RI	Transport	Requires both a state manifest and license.	Rhode Island Hazardous State Management Act of 1987.
	Disposal	Disposal facilities must follow state identification guidelines.	
	Site Cleanup	Cleanup requirements vary according to the course of remediation. Generally, a cleanup standard of 1 ppm is enforced.	
	Spill Cleanup	Case specific review.	
SC	Spill Cleanup	There are no specific regulations, but any PCB contaminated oil in an oil spill will be treated under general pollution control measures.	TSCA.
SD	In Use	SD has the authority to conduct investigations of any place involved with the handling of PCBs or PCB items to make sure they are adhering to SD's TSCA-like laws for TSD.	SD Codified law 34A-11 Administrative Rules of South Dakota 74-28.
	Transport	South Dakota enforces TSCA-like standards.	
	Disposal	South Dakota enforces TSCA-like standards.	
	Site/Spill Cleanup	For groundwater cleanup, PCBS are treated as waste in the SD water management division. There are stricter standards for reporting spills and accidents in South Dakota than in TSCA.	
TN	No State Activities	State defers to TSCA.	TSCA.
TX	I.D./Inspection	Texas is an enforcement grant state.	Texas Solid Waste Disposal Act (Section 25, Article 4477-7) and the Texas Water Code (Section 26.039 Sub 3b)
	Disposal	Non Hazardous PCB waste (<50 ppm) must be disposed of in a municipal landfill or permit site or have a deed recorded via Texas Hazardous Waste Manifests.	
	Spill Cleanup	The Texas Water Commission responds to any spill/threat to water quality. A cleanup standard of less than 1 ppm is authorized by the Texas Water and Administrative Codes.	
UT	No State Activities	State defers to TSCA.	TSCA.

Table 2 (continued)

VT	Inspection	State RCRA program manages inspection of TSDFs and HW generators.	State of Vermont Statute 6606 Chapter 159.
	Transport	DOT regulations apply to PCB haulers. PCB transport must use registered haulers.	
	Disposal	PCB waste over 50 ppm must be approved for disposal by RCRA.	
	Site Cleanup	State levels for cleanup go as low as 25 ppm. Cleanup may be required of soil with a lower PCB concentration if resulting from a significant spill.	
	Spill Cleanup	Case specific review. Can require spill cleanup for lower than standard of 25 ppm PCBs.	
VA	Transport	Manifest is required.	Code of Virginia Waste Management Regulations.
	Disposal	PCBs are regulated only when mixed with other hazardous waste. This waste then comes under the state RCRA program.	
	Site Cleanup	Done on a case by case basis by state Superfund.	
WA	I.D./Inspection	Washington is an enforcement grant state.	WA Dangerous Waste Rules, WAC 173-303 CERCLA-like law (WA Model Toxics Control Act Cleanup Regulation, WAC 173-340)
	Transport	A manifest is required for PCBs headed for disposal.	
	Disposal	For waste with 1-50 ppm PCBs, state RCRA-like law has authority.	
	Site Cleanup	Recently contaminated sites fall under state RCRA requirements; historically contaminated sites fall under Superfund.	
	Spill Cleanup	Case specific review.	
WV	No State Activities	State defers to TSCA.	TSCA

Table 2 (continued)

WI	Transport	Wisconsin regulates wastes with under 50 ppm PCBs: PCB wastes may only be transported by state licensed hazardous waste transporters, or by licensed full service contractors.	Wisconsin Administrative code, Chapter NR 157 and NR 180.
	Disposal	Landfills and incinerators must be EPA or DNR approved. Storage must be licensed under state guidelines. (This applies for > 50 ppm wastes as well)	
	Site/Spill Cleanup	For non liquid PCBs, maximum residual PCB limits are set for contaminated soils and surfaces. Transformers, with over 500 ppm PCBs, must be decontaminated using EPA and DNR approved technologies. For dredged soils, "sediments containing PCBs should be removed to the extent practicable," with actual concentrations set by a case by case basis.	
WY	Disposal	To be built, landfills must receive a permit for construction, and landfills must have written authorization to accept hazardous waste and PCBs.	Wyoming Solid Waste Management and Rules.
DC	No State Activities	State defers to TSCA.	TSCA.
PR	ID/Inspection	PR is an enforcement grant recipient.	TSCA.
VI	Transport	The Virgin Islands require notification of the DEP when shipping PCBs. Additionally, manifests are required for shipping.	Solid and Hazardous Waste Management Rules and Regulations.
	Spill Cleanup	Site by site review; PCBs must be disposed of if above detection level.	

APPENDIX B
SALVAGING OPTIONS FOR TRANSFORMER CARCASSES

The enclosed letter outlines EPA's position with regard to salvaging options for drained carcasses from mineral oil transformers which, prior to being drained, contained fluid contaminated with PCBs in concentrations of < 500 ppm.

DISCLAIMER

THIS APPENDIX HAS BEEN PRINTED FROM THE BEST AVAILABLE COPY. THE TEXT OF THE LETTER HAS BEEN REPRODUCED FOR LEGIBILITY. THIS LETTER IS ALSO AVAILABLE FROM THE TSCA HOTLINE AT (202) 554-1404.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 9 1986

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Ms. Toni K. Allen
Law Offices of
Piper & Marbury
888 Sixteenth Street, N.W.
Washington, D.C. 20006

Dear Ms. Allen:

This is in response to your August 12, 1986, letter, which expressed a concern on the part of the Utility Solid Waste Activities Group (USWAG) about recent interpretations under the TSCA rules for polychlorinated biphenyls (PCBs). Specifically, your letter raised the question whether there had been a change in the Agency's position regarding the disposal of drained carcasses from mineral oil transformers which, prior to being drained, contained fluid contaminated with PCBs in concentrations below 500 ppm.

As you point out in your letter, EPA regulations state that the disposal of drained PCB-contaminated equipment (including mineral oil transformers) is not regulated by the PCB disposal regulations at 40 CFR §761.60. This has been the case since the promulgation of the "PCB Ban Rule" on May 31, 1979 (44 Federal Register 31547). In the proposed Ban Rule (43 Federal Register 24802 et seq., June 7, 1978), EPA explained that "unregulated" disposal of this equipment would allow it to be sold for salvage. While EPA did not propose any restrictions on salvage operations, the Agency did solicit comments on salvage practices and the need for specific regulatory controls on salvaging to prevent undue environmental exposure to PCBs. After considering the comments and testimony received on this issue, EPA elected not to alter the proposal. The Agency concluded that because of the low concentration PCBs involved (<500 ppm), and because of the benefits derived from reclaiming valuable metal resources, the unrestricted salvaging of drained carcasses would not present an unreasonable risk. (See March, 1979, Support Document/Voluntary Environmental Impact Statement for this rulemaking). EPA has consistently followed the position that drained mineral oil (<500 ppm PCBs) carcasses can be disposed of

as scrap. (See The PCB Regulations Under TSCA: Over 100 Questions and Answers to Help You Meet These Requirements, August, 1983). Of course, the option to dispose of drained equipment as salvage is available only for drained carcasses which previously contained PCBs below 500 ppm; the salvage option is not available for "PCB Transformers" with PCB concentrations above 500 ppm.

Recently, confusion has arisen as to whether other aspects of the PCB regulations affect the salvaging of PCB Contaminated equipment. We note, for example, that while the PCB regulations do not impose specific controls on salvaging operations, scrapping practices which result in spills and other uncontrolled discharges of PCBs are regulated as improper disposal, and subject the scrapper to clean-up requirements under the PCB disposal regulations. The PCB containing fluids which have not been drained from the carcasses are always regulated as PCB wastes under these regulations.

Moreover, because salvaging involves the sale of the drained equipment to one or more scrap dealers, the question arises as to the applicability of the TSCA 56(e)(3) ban on the distribution in commerce of PCBs and PCB Items. One could construe the sale of drained equipment to a scrap dealer as distribution in commerce (and therefore prohibited without an exemption), but such a construction would not comport with the intent reflected in the Ban Rule record to treat salvaging of such equipment as a method of "disposal." Rather, each of the transactions involved in ultimately scrapping such equipment is exempted from the ban on distribution in commerce because it is either disposal or distribution in commerce for purposes of disposal. (40 CFR §761.20(c)(2), 761.20(c)(4)).

However, the regulatory definition of "disposal" imposes some limitations on the salvaging practices which may be engaged in by scrappers without an exemption from the distribution in commerce ban. To qualify as disposal, the practice must be one which would "... otherwise complete or terminate the useful life of PCBs or PCB Items." (40 CFR §761.3). Indeed, "unregulated" disposal of drained carcasses means only that disposal in approved incinerators or chemical waste landfills is not required; it does not free the equipment (or its components) from the requirement that disposal terminate the useful life of the PCB equipment. Salvaging aimed at reclamation of the metal resources found in the case and coil generally constitutes disposal, because the PCBs are destroyed by the high temperatures employed in the reclamation process. However, where salvaging consists of disassembling the drained equipment to obtain parts intended for reuse in other equipment, the useful life of the equipment has not been fully terminated. So, the sale of any components containing detectable levels of PCBs, without an exemption, is prohibited for distribution in commerce of PCBs. Likewise, while typical metals reclamation methods can be expected to destroy residual PCBs, the sale of any metals

remaining contaminated after reclamation also is prohibited without an exemption.

In sum, salvaging of <500 ppm drained equipment is unregulated to the extent that: (1) Scrapping practices do not result in spills or uncontrolled discharges of PCBs, and (2) PCB-contaminated components are not reintroduced into commerce. Contaminated transformer components cannot be resold as parts to anyone without an exemption from the ban on distribution in commerce. Also, equipment that is rebuilt using contaminated parts from a salvaged carcass cannot be sold to another without an exemption unless the rebuilt equipment can be reclassified as "non-PCB."

I have enclosed for your reference a document entitled "Salvage Options for Drained Carcasses." This document summarizes in graphic form the relationship between salvaging and other activities regulated under the PCB regulations. Should you have additional questions, please contact Suzanne Rudzinski on 382-3935.

Sincerely,

John A. Moore
Assistant Administrator
for Pesticides and
Toxic Substances

Enclosure

SALVAGE OPTIONS FOR DRAINED CARCASSES

Equipment Under 500 ppm PCBs

September 9, 1986

Ms. Toni K. Allen
Law Offices of
Piper & Marbury
888 Sixteenth Street, N.W.
Washington, D.C. 20006

Dear Ms. Allen:

This is in response to your August 12, 1986, letter, which expressed a concern on the part of the Utility Solid Waste Activities Group (USWAG) about recent interpretations under the TSCA rules for polychlorinated biphenyls (PCBs). Specifically, your letter raised the question whether there had been a change in the Agency's position regarding the disposal of drained carcasses from mineral oil transformers which, prior to being drained, contained fluid contaminated with PCBs in concentrations below 500 ppm.

As you point out in your letter, EPA regulations state that the disposal of drained PCB-contaminated equipment (including mineral oil transformers) is not regulated by the PCB disposal regulations at 40 CFR §761.60. This has been the case since the promulgation of the "PCB Ban Rule" on May 31, 1979 (44 Federal Register 31547). In the proposed Ban Rule (43 Federal Register 24802 et seq., June 7, 1978), EPA explained that "unregulated" disposal of this equipment would allow it to be sold for salvage. While EPA did not propose any restrictions on salvage operations, the Agency did solicit comments on salvage practices and the need for specific regulatory controls on salvaging to prevent undue environmental exposure to PCBs. After considering the comments and testimony received on this issue, EPA elected not to alter the proposal. The Agency concluded that because of the low concentration PCBs involved (<500 ppm), and because of the benefits derived from reclaiming valuable metal resources, the unrestricted salvaging of drained carcasses would not present an unreasonable risk. (See March, 1979, Support Document/Voluntary Environmental Impact Statement for this rulemaking). EPA has consistently followed the position that drained mineral oil (<500 ppm PCBs) carcasses can be disposed of as scrap. (See The PCB Regulations Under TSCA: Over 100 Questions and Answers to Help you Meet These Requirements, August, 1983). Of course, the option to dispose of drained equipment as salvage is available only for drained carcasses which previously contained PCBs below 500 ppm; the salvage option is not available for "PCB Transformers" with PCB concentrations above 500 ppm.

Recently, confusion has arisen as to whether other aspects of the PCB regulations affect the salvaging of PCB Contaminated equipment. We note, for example, that while the PCB regulations do not impose specific controls on salvaging operations, scrapping practices which result in spills and other uncontrolled discharges of PCBs are regulated as improper disposal, and subject the scrapper to clean-up requirements under the PCB disposal regulations. The PCB containing fluids which have not been drained from the carcasses are always regulated as PCB wastes under these regulations.

Moreover, because salvaging involves the sale of the drained equipment to one or more scrap dealers, the question arises as to the applicability of the TSCA §6 (e) (3) ban on the distribution in commerce of PCBs and PCB Items. One could construe the sale of drained equipment to a scrap dealer as distribution in commerce (and therefore prohibited without an exemption), but such a construction would not comport with the intent reflected in the Ban Rule record to treat salvaging of such equipment as a method of "disposal."

September 9, 1986
Ms. Toni K. Allen
Page 2

Rather, each of the transactions involved in ultimately scrapping such equipment is exempted from the ban on distribution in commerce because it is either disposal or distribution in commerce for purposes of disposal. (40 CFR §761.20(c) (2), 761.20 (c) (4)).

However, the regulatory definition of "disposal" imposes some limitations on the salvaging practices which may be engaged in by scrappers without an exemption from the distribution in commerce ban. To qualify as disposal, the practice must be one which would "... otherwise complete or terminate the useful life of PCBs or PCB Items." (40 CFR §761.3). Indeed, "unregulated" disposal of drained carcasses means only that disposal in approved incinerators or chemical waste landfills is not required; it does not free the equipment (or its components) from the requirement that disposal terminate the useful life of the PCB equipment. Salvaging aimed at reclamation of the metal resources found in the case and coil generally constitutes disposal, because the PCBs are destroyed by the high temperatures employed in the reclamation process. However, where salvaging consists of disassembling the drained equipment to obtain parts intended for reuse in other equipment, the useful life of the equipment has not been fully terminated. So, the sale of any components containing detectable levels of PCBs, without an exemption, is prohibited for distribution in commerce of PCBs. Likewise, while typical metals reclamation methods can be expected to destroy residual PCBs, the sale of any metals remaining contaminated after reclamation also is prohibited without an exemption.

In sum, salvaging of <500 ppm drained equipment is unregulated to the extent that: (1) Scrapping practices do not result in spills or uncontrolled discharges of PCBs, and (2) any PCB-contaminated components are not reintroduced into commerce. Contaminated transformer components cannot be resold as parts to anyone without an exemption from the ban on distribution in commerce. Also, equipment that is rebuilt using contaminated parts from a salvaged carcass cannot be sold to another without an exemption unless the rebuilt equipment can be reclassified as "non-PCB."

I have enclosed for your reference a document entitled "Salvage Options for Drained Carcasses." This document summarizes in graphic form the relationship between salvaging and other activities regulated under the PCB regulations. Should you have additional questions, please contact Suzanne Rudzinski on 382-3935.

Sincerely,

John A. Moore
Assistant Administrator
for Pesticides and
Toxic Substances

Enclosure

APPENDIX C
NOTIFICATION REQUIREMENTS FOR MULTIPLE STORAGE AREAS

The enclosed letter explains EPA's position with regard to the waste activity notification requirement for generators with multiple storage areas on the same property.

DISCLAIMER

THIS APPENDIX HAS BEEN PRINTED FROM THE BEST AVAILABLE COPY. THE TEXT OF THE LETTER HAS BEEN REPRODUCED FOR LEGIBILITY. THIS LETTER IS ALSO AVAILABLE FROM THE TSCA HOTLINE AT (202) 554-1404.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 17 1991

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

Mr. R.D. Izatt
Program Manager
Office of Environmental Assurance,
Permits, and Policy
U.S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

Dear Mr. Izatt:

Your letter dated November 5, 1991, to Mr. Haselberger in the Environmental Protection Agency's (EPA) Region 10 Office, regarding the notification requirements for the storage areas located at the Department of Energy's Hanford site has been referred to my office.

As you have expressed in your letter, the preamble language to the Notification and Manifest (N&M) rule (Federal Register 12/21/89, p. 52717) specifically states:

Separate storage areas owned by the same generator on the same property would not require separate identification...all PCB waste generated by a given individual or company is identified with the one consolidated generator who has a single unique identification number. [emphasis added]

The intent of the N&M regulations was to identify facilities that engage in PCB waste activity (i.e., Generators with on-site Storage, Transporters etc.) by assigning an identification number unique to the physical location or address. Facilities with multiple storage areas are encouraged to develop an internal identification system for these areas (i.e., differentiate between storage areas by adding an "a", "b" etc. to their assigned identification number). In addition, as stated in the preamble to the N&M rule (p. 52718):

...consolidation is employed as a tool to make the number of notifying generators manageable...

In short, your interpretation is consistent with EPA policy; therefore, you are only required to submit a single notification for your Hanford site. A copy of this letter will also be forwarded to our Region 10 Office. If you have any further questions regarding this issue, please contact Geraldine Hilton of my staff at (202) 260-3992.

Sincerely,

A handwritten signature in dark ink, appearing to read "Tony Baney", with a stylized flourish underneath.

Tony Baney, Chief
Chemical Regulation Branch

cc: Bill Hedgebeth, Region 10
PCB Regional Coordinators

December 17, 1991

Mr. R.D. Izatt
Program Manager
Office of Environmental Assurance,
Permits, and Policy
U.S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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Sincerely,

Tony Baney, Chief
Chemical Regulation Branch

cc: Bill Hedgebeth, Region 10
PCB Regional Coordinators

APPENDIX D
Federally Sponsored Hotlines

**Emergency Planning
Community Right-To-Know
(EPCRA) Information Hotline**

Provides communities and individuals with help in preparing for accidental releases of toxic (EPCRA) Information Hotline chemicals. This hotline, which complements the RCRA/Superfund Hotline, is maintained as an information resource rather than an emergency number. It operates Monday through Friday from 8:30 a.m. - 7:30 p.m. (EST), and can be contacted at (800) 535-0202.

**National Response Center
(NRC) Hotline**

Operated by the U.S. Coast Guard, this hotline is used to report spills of oil and other hazardous materials. The hotline is available 24 hours a day, every day of the year at (800) 424-8802 or, in the Washington, D.C. dialing area, at (202) 426-2675.

**RCRA/CERCLA (Superfund)
Hotline**

Responds to questions from the public and regulated community on the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund), and also responds to requests for RCRA and Superfund documents. It operates Monday through Friday from 8:30 a.m. - 7:30 p.m. (EST), and can be contacted at (800) 424-9346 or, in the Washington, D.C. dialing area, at (703) 920-9810.

**Toxic Substances Control Act
(TSCA) Assistance Information**

Provides both general and technical information and publications about toxic substances, including PCBs. A variety of other services also are offered to help businesses comply with TSCA laws, including regulatory advice and aid, publications, and audiovisual materials. It operates Monday through Friday from 8:30 a.m. - 5:00 p.m. (EST), and can be contacted at (202) 554-1404, Fax (202) 554-5603.

APPENDIX E
U.S. Environmental Protection Agency Contacts

Headquarters

Office of Pollution Prevention and Toxics, Chemical Management Division, Operations Branch:

Thomas Simons,	(202) 260-3991
Geraldine Hilton,	(202) 260-3992

EPA Regions

Region 1 - Connecticut, Main, Massachusetts, New Hampshire, Rhode Island, Vermont

Mary Ann Milette - general issues	(617) 565-3658
Kimberly Tisa - general issues	(617) 565-3257

Region 2 - New Jersey, New York, Puerto Rico, Virgin Islands

John Brogard - permitting only	(212) 264-8682
David Greenlaw - general questions, spills	(908) 906-6817

Region 3 - Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia

Ed Cohen - unique disposal permitting	(215) 597-7668
Charlene Creamer - general issues, historical spills	(215) 597-4651
Spill Line - 10 lb. reporting	(215) 597-9898

Region 4 - Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

Steward Perry - disposal	(404) 347-1035
Connie Landers - disposal, spills	(404) 347-3864
Mark Bloeh - disposal	(404) 347-3864

Region 5 - Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

Sheldon Simon - PCB permitting only	(312) 886-6087
Scott Cooper - general questions	(312) 886-1332
Priscilla Fonesca - general questions	(312) 886-1334
Tony Martig - genral & legal questions	(312) 353-2291

Region 6 - Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Jeff Robinson - general issues (214) 655-7577
Donna Mullins - spills (214) 655-7244

Region 7 - Iowa, Kansas, Missouri, Nebraska

Bob Jackson - dispoal, spills (913) 551-7020
Dave Phillippi - spills (913) 551-7020

Region 8 - Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

Dan Bench - disposal, spills (303) 293-1686

Region 9 - Arizona, California, Hawaii, Nevada, American Samoa, Guan

Rus Kemmerrer - general issues (415) 744-1115
Greg Czajkowski - disposal (415) 744-1087

Region 10 - Alaska, Idaho, Oregon, Washington

Bill Hedgebeth - team leader (206) 553-7369
Christina Colt - permitting (206) 553-8577

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