UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

--- PCB Q & A MANUAL ---

An EPA TSCA assistance document designed to provide the regulated community with Agency interpretations to frequently posed questions.*

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OFFICE OF POLLUTION PREVENTION AND TOXICS

1994 EDITION

* This publication is an informal document, and persons are directed to the PCB final rules at Title 40 of the Code of Federal Regulations part 761 (40 CFR part 761) except where otherwise noted for specific legal requirements. This document provides information on the regulatory requirements for polychlorinated biphenyls that have been reflected in <u>final</u> regulations published through December 31, 1990. Any past versions of this document either final or in draft form are now obsolete.

--FOREWORD--

The PCB Q & A Manual has been prepared to assist the user in answering frequently asked questions on the PCB regulations. It is a quick source of information that will be updated as new rules and policies become final. The looseleaf style and pagination within chapters will facilitate updating as needed. Each time a new chapter is added, a new table of contents and a new alphabetical list of chapters will also be generated. All persons to whom EPA has sent the PCB Q & A Manual will automatically receive updates with instructions to add and/or replace pages already in the binder. Please complete the following Update Request Form and mail this entire page to: Environmental Assistance Division (7408), Environmental Protection Agency, 401 M St. S.W., Washington, DC 20460, or call the TSCA Assistance Information Service at 202-554-1404 to receive the PCB Q & A Manual Updates and Revisions.

- PCB Q & A MANUAL -

Update Request Form

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- INTRODUCTION -

The term PCB is an acronym for polychlorinated biphenyl. PCBs are produced by attaching one or more chlorine atoms to a biphenyl molecule. As one of the most stable organic compounds known, their properties made them useful as dielectric fluid in various types of electrical equipment and heat transfer systems.

Monsanto Corporation was the principal manufacturer of PCBs for use as a fire-resistant or nonflammable insulating fluid in electrical and heat transfer equipment. In 1977, Monsanto voluntarily ceased production of PCBs because of widespread environmental concerns about the chemical.

PCBs were sold under the trade name "Aroclor." However, companies that used PCBs in the manufacture of transformers and capacitors, and for other uses, often used other trade names. Common trade names for PCBs include the following:

COMMON TRADE NAMES

Aroclor	Chlorinol	Fenclor	Nonflammable Liquid
Arochlor B	Chlorphen	Hyvol	Phenoclor
ALC	Clophen	Inclor	Pydraul
Apirolio	Clorinol	Inerteen	Pyralene
Asbestol	Diaclor	Keneclor	Pyranol
ASK	DK	Kenneclor	Pyroclor
Askarel*	Dykanol	Magvar	Saf-T-Kuhl
Adkarel	EEC-18	MCS 1489	Santotherm
Capacitor 21	Elemex	No-Flamol	Santovac 1 and 2
Chlorextol	Eucarel	Nepolin	

*Askarel is also the generic term used for nonflammable insulating liquid in transformers and capacitors.

"Askarel" PCBs are chemical mixtures containing many different PCB congeners. They have a heavy, liquid, oil-like consistency, and weigh 10 to 15 pounds per gallon. They are very stable, exhibit low water solubility, low vapor pressure, low flammability, high heat capacity, low electrical conductivity, and have a favorable dielectric constant for use in electrical equipment.

When PCBs were manufactured as dielectric fluid for transformers, they were often mixed with certain organic solvents such as

chlorinated benzenes. Therefore, the dielectric fluids present in the electrical transformers containing PCBs are usually not pure PCB. The presence of these other chemicals influences the physical/chemical properties of the Askarel fluid.
PCBs are also produced as byproducts and process impurities in certain chemical manufacturing processes. They may vary from a single isomer to a variety of congeners and display different physical and chemical properties, depending on the number of isomers and the degree of chlorination (the number of chlorine atoms attached to the biphenyl molecule). PCBs with fewer chlorine atoms are, in general, less persistent, more water soluble, and more flammable than PCBs with more chlorine atoms.

HEALTH EFFECTS

PCBs are toxic and persistent. Available laboratory animal studies indicate an oncogenic potential whose degree varies with exposure. Epidemiological data are not now adequate to confirm or negate oncogenic potential in humans. Further epidemiological research is needed to correlate human and animal data. However, EPA finds no evidence to suggest that the animal data would not predict an oncogenic potential in humans.

PCBs can enter the body through the lungs, gastrointestinal tract, and skin. They circulate throughout the body and are stored in the body's fatty tissue. EPA finds that PCB exposure may cause negative reproductive effects and developmental toxicity in humans. Available data show that some PCBs have the ability to alter reproductive processes in mammals, sometimes even at doses that do not cause other signs of toxicity. Animal data and limited available data on humans suggest that prenatal exposure to PCBs can result in various degrees of developmental effects. Postnatal effects have been demonstrated on immature animals, following exposure to PCBs prenatally and via breast milk.

In some cases, chloracne may occur in humans exposed to PCBs. Severe cases of chloracne are painful and disfiguring, and may be persistent. Although the effects of chloracne are reversible, EPA considers these effects to be significant. For more information on the health effects of PCBs, The Response to Comments on the Health Effects of PCBs submitted by the Chemical Manufacturers Association and the Edison Electric Institute is available from the TSCA Assistance Information Service at 202-554-1404.

In addition to the toxic effects related to exposure to PCBs

alone, EPA is very concerned about the toxicity of the chemicals produced when PCBs are involved in fire-related incidents. These chemicals include polychlorinated dibenzofurans (PCDFs) and polychlorinated dibenzo-p-dioxins (PCDDs), both of which are believed to be much more toxic than PCBs themselves. Toxicological effects of these chemicals include embryotoxicity, teratogenicity, reproductive effects, and oncogenicity. Other compounds of toxicological significance may also be produced and released from fires involving PCB equipment. For further information on the health effects of dioxins, The Ambient Water Quality Criteria For 2,3,7,8-Tetrachlorodibenzo-p-dioxin is available from the TSCA Assistance Information Service at 202-554-1404.

ENVIRONMENTAL EFFECTS

Certain PCB congeners are among the most stable chemicals known and decompose very slowly once they are released into the environment. They remain in the environment and are taken up and stored in the fatty tissue of organisms. EPA has concluded that PCBs can be concentrated in freshwater and marine organisms. Available data show that PCBs affect the productivity of phytoplankton and the composition of phytoplankton communities. PCBs also cause deleterious effects on environmentally important freshwater invertebrates and impair reproductive success in birds and mammals.

PCBs are toxic to fish at very low exposure levels and can adversely affect their survival rate and reproductive success. The literature shows that various sublethal physiological effects on bone development and reproductive organs are attributed to exposure to PCBs. Phytoplankton are the primary food source directly or indirectly of all sea organisms. Also, phytoplankton are a major source of oxygen in the atmosphere. The transfer of PCBs up the food chain from phytoplankton to invertebrates, fish, and mammals can result in human exposure through consumption of PCB-containing food sources.

- HISTORY OF THE PCB REGULATIONS -

In recognition of the risks associated with PCBs and their widespread distribution throughout the environment, in 1976, the United States Congress enacted the Toxic Substances Control Act (TSCA), which banned with limited exceptions the manufacture,

processing, distribution in commerce, and use of PCBs other than in a "totally enclosed manner". Section 6(e) of TSCA also required EPA to promulgate regulations for the proper disposal of PCBs and develop clear and adequate warnings and instructions with respect to their processing, distribution in commerce, use and disposal. Section 16 of TSCA provides for penalties up to $25,000 a day per violation of section 6(e) of the Agency's PCB regulations.

PCB marking and disposal regulations were published in the Federal Register on February 17, 1978 (43 FR 7150). The PCB "Ban Rule" (Federal Register May 31, 1979) included provisions banning the manufacture, processing, distribution in commerce, and use of PCBs which became effective on July 2, 1979 (44 FR 31514).

The May 31, 1979 Rule:

- Designated all intact, nonleaking capacitors, electromagnets and transformers, other than railroad transformers, as "totally enclosed," which allowed their use without restrictions or conditions;

- Established a 50 ppm PCB regulatory cutoff for manufacturing, processing, distribution in commerce, and use; and

- Authorized the use of PCBs under specific conditions and time constraints for 11 activities. These activities were:

    - Servicing transformers (other than railroad transformers),
    - Use in and servicing of railroad transformers,
    - Use in and servicing of mining equipment,
    - Use in heat transfer systems,
    - Use in hydraulic systems,
    - Use in carbonless copy paper,
    - Use in pigments,
    - Use in and servicing of electromagnets,
    - Use in natural gas pipelines,
    - Use in small quantities for research and development, and
    - Use as a mounting medium in microscopy.

The Environmental Defense Fund (EDF) challenged several provisions of the May 1979 rule, and in October of 1980, the U.S. Court of Appeals for the District of Columbia ruled that there was insufficient evidence in the record to support several provisions of the May 1979 rule. Specifically, the Court struck

down the classification of transformers, capacitors, and electromagnets as "totally enclosed," and the regulatory cutoff at 50 ppm for the manufacture, processing, distribution in commerce, and use of PCBs. The 11 use authorizations contained in the May 1979 rule remained in effect. EPA, EDF, and certain industry representatives filed a joint motion seeking a stay of the Court's mandate until further rulemaking could be completed. The Court granted the stay.

On August 25, 1982, EPA issued a final rule governing the use and servicing of electrical equipment containing PCBs (47 FR 37342). This final rule was issued as a result of the Court's decision to strike down the May 1979 rule's classification of transformers, capacitors, and electromagnets as "totally enclosed." In the August 25, 1982 rule, EPA authorized the use of electrical equipment containing PCBs with certain conditions and restrictions intended to minimize human and environmental exposures to PCBs.

On October 21, 1982, EPA issued part one of a two-part rule to address the 50 ppm regulatory cutoff (47 FR 46980). This final rule addressed closed and controlled waste manufacturing processes. EPA submitted a plan to the Court on November 1, 1982, that requested a further extension of the stay of mandate for the 50 ppm cutoff and presented plans for the completion of the rulemaking on this issue. (The October 21, 1982 rule was superseded later by the "Uncontrolled PCB's Rule" issued on July 10, 1984.)

In addition to issuing rules as a result of the Court decision in October 1980, EPA also promulgated an amendment to the Use Authorization for Railroad Transformers which originally appeared in the May 1979 rule. On January 3, 1983, EPA published a final rule amending and extending the use authorization for PCB railroad transformers (48 FR 124).

On March 30, 1983, EPA promulgated a procedural change in the approval process for mobile and non-unique disposal facilities (48 FR 13181). The authority for granting or denying approval of these facilities was transferred from the regions to EPA headquarters.

On July 10, 1984, several rulings were made final. One rule addressed individual and class petitions for exemption from the prohibition against the manufacture, processing, and distribution in commerce of PCBs (49 FR 28154). The use of small quantities of PCBs for use in research and development was authorized indefinitely.

On July 10, 1984, EPA also issued an amendment to the October 21, 1982 rule (49 FR 28172). This "Uncontrolled PCB's Rule" completed part two of EPA's earlier 1982 rulemaking regulatory cutoff for PCBs, which was overturned in the 1980 Court decision. This rule excluded additional processes from regulation based upon EPA's determination that these processes do not present an unreasonable risk of injury to human health or to the environment. Among other things, the rule permitted the manufacturing, processing, distribution in commerce, and use of inadvertently generated PCBs and recycled PCBs under limited circumstances. This amendment replaced the terms "Closed Manufacturing Process" and "Controlled Waste Manufacturing Process" with "Excluded Manufacturing Process." PCBs with concentrations below 50 ppm, under certain conditions and restrictions, were authorized for use in hydraulic and heat transfer fluid and in the compressors and liquid of natural gas pipeline systems.

On November 8, 1984, a final rule was issued that revised the definition of "Totally Enclosed Manner" (49 FR 44634). It changed from "any manner that will ensure that any exposure of human beings or the environment to any concentration of PCBs will be insignificant, that is, not measurable or detectable by any scientifically acceptable method" to "any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs."

The "PCB Transformer Fires Rule" was published on July 17, 1985 (50 FR 29170). This final rule amended portions of the August 25, 1982 electrical equipment rule by placing additional restrictions and conditions on the use of PCB Transformers (electrical transformers containing 500 ppm or greater PCBs). This rule prohibited the use of higher secondary voltage (480 volts and above) network PCB Transformers in or near commercial buildings after October 1, 1990. By October 1, 1990, it required the installation of enhanced electrical protection on lower secondary voltage network PCB Transformers and radial PCB Transformers in use in or near commercial buildings. It prohibited further installation of PCB Transformers in or near commercial buildings after October 1, 1985 and required the registration by December 1, 1985 of all PCB Transformers with fire response personnel and building owners. Further, the ruling required, by December 1, 1985, the marking of the exterior of all PCB Transformer locations and the removal of all stored combustibles located near PCB Transformers.

This rule also required owners of PCB Transformers involved in fire-related incidents to immediately notify the National Response Center and to take measures as soon as possible to

contain any potential releases of PCBs or incomplete combustion products to water.

A clarification of the July 17, 1985 rule was published on December 31, 1986 (51 FR 47241). It addressed the following areas of the regulation:

- the PCB Transformer registration requirement,
- the requirement for the removal of stored combustibles,
- the requirement to notify the National Response Center of fire-related incidents,
- the definition of commercial building,
- the status of mineral oil transformers found to have over 500 ppm PCBs,
- the ban on the installation of PCB Transformers in or near commercial buildings,
- the requirement for labelling of exterior access to PCB Transformer locations.

The PCB Spill Cleanup Policy was published on April 2, 1987 (52 FR 10688). The Policy establishes methods of cleanup and cleanup levels of spills containing PCBs at concentrations of 50 ppm or greater. EPA uses the Policy standards to determine the adequacy of cleanup for penalty purposes. It specifies cleanup of PCBs to different levels depending on the spill location, the potential for exposure to residual PCBs remaining after the cleanup, the concentration of the PCBs initially spilled and the nature and size of the population potentially at risk of exposure. The Policy imposes the most stringent requirements on areas where there is the greatest potential for human exposure to spilled PCBs; less stringent requirements where the type and degree of contact present lower potential exposure; and even less stringent requirements where there is little potential for any direct human exposure.

While the Policy applies to the majority of spill situations, it does provide for exceptional situations that may require additional cleanup or less stringent standards at the discretion of the EPA regional office.

On June 27, 1988, EPA published final amendments to the "Uncontrolled PCBs Rule" (Federal Register July 10, 1984) which excluded additional materials containing less than 50 ppm PCBs from regulation (53 FR 24206). The amendments did the following: 1) eliminated the requirement that maintenance workers wear Viton^{R} elastomer gloves when servicing heat transfer and hydraulic systems; 2) allowed the use of and distribution in

commerce of certain equipment and materials that have been adequately decontaminated in accordance with the applicable PCB spill cleanup policies in effect at the time of the cleanup; 3) maintained the 3 parts per billion (ppb) water discharge limit from paper processing mills or allowed an equivalent mass-based limitation for water discharges to be met; 4) prohibited the burning for fuel of oil containing 2 to 49 ppm PCBs in nonindustrial boilers and furnaces; and 5) excluded from the ban on processing, distribution in commerce, and use certain products containing less than 50 ppm PCBs. Remaining prohibitions on PCBs less than 50 ppm are as a dust control agent, sealant, coating, inert ingredient in pesticides or herbicides, road oiling agent, use as a rust preventative, and use as a fuel in nonindustrial boilers and furnaces. Readers should consult with their State Department of Environmental Quality or equivalent to determine if there are any additional regulations the State may have for PCBs less than 50 ppm. A document titled "Summary of State PCB Management Programs" is available through the TSCA Assistance Information Service (202-554-1404).

On July 19, 1988, EPA published amendments (53 FR 27322) to the "PCB Transformer Fires Rule" (Federal Register July 17, 1985). The amendments include: 1) modifying the enhanced electrical protection provision for nonsidewalk lower secondary voltage network PCB Transformers; 2) prohibiting the use, as of October 1, 1993, of all lower secondary voltage network PCB Transformers located in sidewalk vaults; 3) allowing the installation of PCB Transformers in or near a commercial building only for reclassification or emergency purposes; 4) allowing the use under certain limited conditions of an alternate label (other than M_L) on the exterior of PCB Transformer locations; and 5) setting up a schedule of compliance for mineral oil transformers thought to be PCB contaminated (i.e., 50-499 ppm) and later determined to be a PCB Transformer (i.e., $\geq$ 500 ppm).

The 1985 PCB Transformer Fires Rule regulated the use of transformers in an attempt to reduce fire-related risks posed by the use of these transformers. After publication of the August 21, 1987 proposed amendment to the PCB Transformer Fires Rule, EPA received comments indicating that complete deenergization of the transformer would not be necessary to prevent transformer rupture. The comment stated that deenergization of the faulted phase (partial deenergization) would be sufficient to prevent transformer rupture. After further review, EPA determined that partial deenergization may be acceptable electrical protection for low voltage radial PCB transformers under some circumstances.

By final rule dated November 26, 1990 (55 FR 49043) EPA amended the regulations concerning enhanced electrical protection

requirements for low voltage radial transformers containing PCBs and extended the deadline for compliance for these types of transformers to February 25, 1991. This rule did not alter any other enhanced electrical protection requirements. It provided that 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 are required to install this type of electrical protection using good engineering practices.

There had been increasing concern on the part of Congressional oversight committees about certain aspects of EPA's disposal program for polychlorinated biphenyl (PCB) wastes. In particular, the most frequently cited concerns were: (1) the lack of an effective tracking system that would track PCB wastes in a "cradle-to-grave" fashion; and (2) the lack of sufficient oversight of the activities and qualifications of the PCB waste brokers and other intermediate storers who may store the PCB wastes owned by others.

The PCB Notification and Manifesting rule published on December 21, 1989 (54 FR 52716) adds to the TSCA disposal regulations a PCB waste tracking system based on the RCRA model for the tracking of hazardous wastes. At the heart of the tracking system are the requirements that PCB waste handlers (disposers, commercial storers, transporters, and generators with PCB storage areas) notify EPA of their PCB waste activities, and use the RCRA Uniform Manifest in connection with their shipments of regulated PCB wastes.

Second, this rule adds to the existing PCB storage facility standards a requirement that certain commercial storers of PCB wastes obtain written approvals from the EPA Regional Administrators. The issuance of these commercial storer approvals is conditioned on an evaluation of the applicant's qualifications to engage in the business of PCB waste storage, and the submission of closure plans and proof of financial responsibility for proper closure of PCB storage areas.

In addition, the rule includes additional recordkeeping and reporting requirements that will complete the PCB waste tracking

function, as well as facilitate EPA's enforcement of the PCB disposal regulations.

On November 2, 1990 (55 FR 46470) EPA proposed a rule which addresses the method by which permits issued under 40 CFR Part 761 are to be revoked or suspended. The criteria and procedures for suspensions and revocations, proposed in the PCB Permit Revocation Rule, will apply to those approvals required by the 1989 Notification and Manifesting rule, as well as to the disposal approvals which are currently required by the regulations. At the time of publication of this document, the Permit Revocation rule had not been published in final form.

- PCBs IN THE WORKPLACE -

There are Occupational Safety and Health Administration (OSHA) regulations governing PCBs in the workplace. OSHA has in place two 8-hour time-weighted averages (TWAs) for chlorodiphenyl. For chlorodiphenyl containing 42 percent chlorine, the TWA is 1.0 mg/m^3 of workplace air. For chlorodiphenyl containing 54 percent chlorine, the TWA is 0.5 mg/m^3 of workplace air. An employee's exposure to PCBs in any 8-hour workshift of a 40-hour week cannot exceed these concentrations. Further, employers are required to ensure a safe workplace under OSHA regulations. If specific standards are not applicable, this general requirement for a safe workplace would apply.

The National Institute for Occupational Safety and Health (NIOSH) recommends a more stringent air standard for worker exposure of 1.0 $\mu g/m^3$.

EPA's rules do not directly regulate workers, but the rules do restrict or prohibit certain PCB activities and reduce the amount of PCBs in the workplace. Therefore, as a result of EPA's PCB rules the number of workers exposed to PCBs has been dramatically reduced. EPA rules prohibit PCB Transformer rebuilding (except for railroad transformers) that involves removal of the transformer's coil. Prohibitions have terminated activities that could result in the major long-term occupational exposure to high concentrations of PCBs. However, worker exposure can still occur as a result of PCB spills and authorized servicing operations for PCB Transformers.

PROTECTIVE CLOTHING

The type of protective clothing that should be worn when working with PCBs depends on the individual circumstances. Protective clothing and equipment for workers is intended to prevent skin and eye contact and to control respiratory exposure.

In any operation where workers may come into contact with PCBs, protective clothing impervious to PCBs should be worn. Gloves, boots, overshoes, and bib-type aprons that cover boot tops should be provided, when necessary.

Nonporous gloves and boots and heavy overalls can usually protect the skin. For major spill cleanup activities, a full suit of nonporous clothing may be appropriate. Also, nonporous aprons can be effective in reducing contamination of worker clothing. The following tables rate comparable materials used to protect against dermal exposure to PCBs.

COMPARATIVE TABLES ON MATERIALS USED TO PROTECT AGAINST DERMAL EXPOSURE TO PCBs

*Table 1. Recommendations for Protection Against Aroclor 1254 Undiluted and Paraffin Oil

Highly Recommended	Recommended	Not Recommended
Viton	Teflon[b,c]	Surgical rubber
Viton SF	Polyvinyl alcohol	Polyethylene
Vitrile	Nitrile[b]	
	Neoprene	
	Saranex[b]	
	Butyl[b]	

*Table 2. Recommendations for Protection Against Aroclor 1254 in Trichlorobenzene: ≥ 58 percent Arochlor 1254[a]

Highly Recommended	Recommended	Not Recommended
Vitrol	Teflon	Saranex
Viton SF	Nitrile	Butyl
	Polyvinyl alcohol	Neoprene
	Vitrile	Polyethylene
		Surgical rubber

a. "Highly Recommended" materials showed no breakthrough in 24 hours. Breakthrough time was 8 to 24 hours for the "Recommended" category. Breakthrough time was less than 8 hours for the "Not Recommended" category. These recommendations assume comparable thickness, thus are based on normalized breakthrough times.

b. Investigators noticed what appeared to be defects in both Butyl and Saranex-laminated tyvek and nitrile; in one Teflon thumb, penetration appeared to occur through a seam.

c. Teflon is not highly recommended because when it is flexed, as it would be when worn, permeation sometimes takes place due to physical defects which flexing

produces.

*From the EPA/OTS TSCA Public Files; Versar, Inc. OPTS 62017 PCBs Controlled Wastes Communication N 23 File.

***BREAKTHROUGH TIMES FOR VARIOUS PROTECTIVE GARMENT MATERIALS EXPOSED TO PCBs**

TYPE OF MATERIAL	THICKNESS (mils)	TIME (min)
Homogeneous, nonbonded		
Butyl rubber	22	2.5
Neoprene rubber latex	23	0.5
Nitrile rubber latex	8	1.0
Nitrile rubber milled	12	0.8
Polyethylene, medium density	2	0.6
Poly(vinyl alcohol), unsupported	15	0.3
Surgical rubber latex	8	#
Teflon, crumpled	2	#
Teflon, noncrumpled	2	60.0
Viton elastomer	10	0.3
Coated, bonded**		
Butyl-coated nylon***	15	3
Polyethylene-coated Tyvek	5	
Tyvek toward H_2O		
Polyethylene toward H_2O		
Polyethylene-coated nylon	4	0.5
Poly(vinyl chloride)-coated nylon	10	0.5

* From the EPA/OTS TSCA Public Files; Versar Inc. OPTS 62017 PCB Controlled Wastes File. Weeks and McLeod 1980.

** These are also referred to as composite or multilayered materials.

*** Mil C-12189

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#   Testing was not performed.
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EYE PROTECTION/RESPIRATORY EXPOSURE CONTROL

Eye protection (chemical safety goggles, face shields with goggles or safety glasses with side shields) should be worn during any operation in which PCBs are present. If liquid or solid PCBs contact the eyes, they should be irrigated immediately with large quantities of water and then a physician or other responsible medical personnel should examine them.

Respiratory exposure control (whether individual protection or workplace control) is most relevant for long-term production operations or major spills, when concentrations of airborne PCBs may exceed the recommended occupational exposure limit. PCB Transformer spills can pose respiratory problems when solvents, such as trichlorobenzene, are mixed with PCBs. Small spills, such as capacitor failures, seldom pose respiratory problems, but protection should be provided for incidents in confined areas. The following chart outlines the National Institute for Occupational Safety and Health (NIOSH) recommendations for respiratory protection from PCBs. EPA also recommends the use of dust masks (surgical type) for use during soil cleanup.

*Respirator Selection Guide

Concentration of PCBs	Respiratory Type Approved Under Provisions of 30 CFR 11
Greater than 1.0 cubic m or Emergency (entry into areas of unknown concentration)	(1) Self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode. (2) Combination Type C supplied air respirator with full facepiece operated in pressure-demand or other positive pressure mode and an auxiliary self-contained breathing apparatus operated in pressure demand or other positive pressure

mode.

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*Source: NIOSH Recommendation USDHEW 1977

REGIONAL PCB BRANCH OFFICES

USEPA Region I (ME, NH, VT, MA, RI, CT)

Pesticides and Toxic
Substances Branch (ATC)
John F. Kennedy Federal Bldg.
Boston, MA 02203
(617-565-3257)

USEPA Region II (NY, NJ, PR, VI)

Pesticides and Toxic
Substances Branch (MS-105)
2890 Woodbridge Ave.
Edison, NJ 08837
(908-906-6817)

USEPA Region III (PA, DE, MD, VA, WV, DC)

Toxics and Pesticides Branch
841 Chestnut Bldg.
Philadelphia, PA 19107
(215-597-7668)

USEPA Region IV (KY, TN, NC, SC, GA, AL, MS, FL)

Pesticides and Toxic
Substances Branch
345 Courtland St. N.E.
Atlanta, GA 30365
(404-347-1033)

USEPA Region V (OH, IN, IL, MN, WI, MI)

Pesticides and Toxic
Substances Branch (SP-14J)
77 West Jackson Blvd.
Chicago, IL 60604
(312-886-7061)

USEPA Region VI (AR, LA, OK, TX, NM)

Pesticides and Toxic
Substances Branch (6T-PT)
1445 Ross Avenue
Suite 1200
Dallas, TX 75202-2733
(214-655-7290)

USEPA Region VII (IA, KS, MO, NE)

Toxics and Pesticides Branch (TOPE)
726 Minnesota Avenue
Kansas City, KS 66101
(913-551-7394)

USEPA Region VIII (ND, SD, MT, WY, UT, CO)

Pesticides and Toxic
Substances Branch
One Denver Place
Suite 500
999 18th Street
Denver, CO 80202-2466
(303-293-1686)

USEPA Region IX (CA, NV, AZ, HI, Guam)

Pesticides and Toxic
Substances Branch (A-4-4)
75 Hawthorne St.
San Francisco, CA 94105
(415-744-1094)

USEPA Region X (WA, OR, ID, AK)

Pesticides and Toxic
Substances Branch (AT-083)
1200 6th Avenue
Seattle, WA 98101
(206-553-7369)

CHAPTER I
PART A

TRANSFORMERS
(NONRAILROAD)

PART A

- TRANSFORMERS -

Transformers are used to raise and lower voltage. As voltage is transmitted from a generating facility through transmission and distribution systems, it may be raised or lowered a number of times depending on the technical configuration of the system and the varying voltage requirements of the customer.

A large transformer may be several times the size of an automobile and contain hundreds or even thousands of gallons of oil or other dielectric fluid. Such transformers are typically located in generating facilities or substations. However, the vast majority of transformers are considerably smaller.

Between the extremely large transformers used to transmit power and the extremely small overhead transformers used to bring power into homes, there are numerous transformers of assorted size and voltage ratings used to adjust voltage to the requirements of all types of commercial and industrial customers. Prior to EPA's regulations of PCBs, when these transformers were located indoors, fire codes often encouraged the use of PCBs as an insulating fluid.

Today, for purposes of regulation, EPA classifies transformers into three basic categories - "PCB," "PCB-Contaminated," and "Non-PCB." A "PCB Transformer" is one which contains 500 parts per million (ppm) or greater PCBs. A "PCB-Contaminated Transformer" is one which contains 50-499 ppm PCBs. And finally, a "Non-PCB Transformer" contains less than 50 ppm PCBs.

EPA also categorizes transformers by their type, location, and secondary voltage. As these various categories of transformers are regulated to different degrees, it is important to know the type of transformer in question.

Q1: Do transformers have to be tested to determine their PCB concentration? If not, how can I determine the equipment's classification?

A1: The regulations do not require that these types of equipment be tested to determine the PCB concentration in their fluid. However, in the absence of a test, certain assumptions must be made about the equipment. For example, if the nameplate

indicates that the equipment contains PCB dielectric fluid (see table of trade names on p.i), or, if there is any reason to believe that the equipment at one time contained PCB dielectric fluid, or, if there is no nameplate on the equipment or other information to indicate the type of dielectric fluid, then the equipment must be assumed to be a PCB Transformer (500 ppm or greater). Transformers which are known to contain mineral oil dielectric fluid and whose PCB concentration is unknown, must be assumed to be PCB-Contaminated Electrical Equipment (50-499 ppm) and must be treated as such. However, if the PCB concentration has ever been known or if a person has reason to know the concentration equalled or exceeded 500 ppm PCBs, the transformer must be treated as a PCB Transformer. These "assumption rules" effectively apply to all regulatory requirements relating to the equipment including: use and servicing, leaks and spills, sale for reuse, storage for disposal, and disposal.

Q2: Can screening tests, such as Clor-n-Oil™, be used to determine the PCB concentration of a transformer? If so, can "Certified Non-PCB" labels be used to classify transformers based upon a screen test?

A2: Currently, the regulations do not require that any particular testing method be utilized when determining the PCB concentration in transformers. However, because EPA does not recognize the results of such field concentration screening tests for purposes of classifying transformers, transformer owners should prudently scrutinize PCB testing options, as there are significant differences in the integrity and accuracy of various testing methods. It should be noted that, in most situations, EPA will utilize laboratory gas-chromatography (GC) testing to determine PCB concentrations during facility inspections. EPA recommends that owners of electrical equipment choose testing methods, and practice sampling procedures, which are analytically accurate, reproducible, assure quality control, and are certifiable.

The use of non-PCB labels is unregulated by EPA. That is to say, there are no prohibitions or requirements to place non-PCB labels on transformers. However, if non-PCB labels are used to indicate the classification of equipment, then owners should be able to provide documentation such as test results or manufacturer's letters along with historic service records which will substantiate the non-PCB classification. A criminal action could be pursued for someone intentionally using non-PCB labels on known or

assumed PCB Items.

Q3: Can I batch test oil samples from several transformers and classify each unit based upon one test result?

A3: The only place in the regulations where "batch testing" is allowed is under testing procedures for disposal of PCBs [761.60(g)]. It is only owners or users of mineral oil dielectric fluid electrical equipment who may take advantage of the batch testing provision. However, batch testing to classify equipment for continued use of PCBs is also allowable provided that known or assumed dilution does not take place. That is, mineral oil that is assumed or known to contain 50 ppm or greater PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the batch. While there is no requirement to individually test mineral oil transformers, if test results of the drained carcass(es) show a concentration of greater than 500 ppm PCBs, that/those transformer(s) tested as a batch must be treated as a PCB (>500 ppm) and the batch tested oil must be treated as containing greater than 500 ppm PCBs for purposes of disposal.

Q4: Many pole-mounted distribution transformers have no information on their nameplate indicating that they do, in fact, contain mineral oil dielectric fluid. Without this nameplate information, am I required to assume that these units are "PCB" classification (500 ppm or greater)?

A4: The regulations allow "oil-filled" electrical equipment whose PCB concentration is unknown to be assumed less than 500 ppm (PCB-Contaminated, 50-499 ppm). EPA has received numerous comments from the electric utility industry and others indicating that significant numbers of pole-mounted utility distribution transformers have no nameplate information stating the type of "oil" in the unit. In the absence of this direct indication, the owner may still make the assumption of "PCB-Contaminated" if the purchase record, or manufacturer's literature or other specific documentation, identifies the transformer as oil-filled, or if manufacturer's nameplate codes correlate with oil-filled status. However, in the absence of direct nameplate information or secondary documentation, any such transformer must be considered as "PCB" unless tested and proved otherwise.

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for any use including transformers is prohibited without an EPA exemption [TSCA section 6(e) and 761.20(b)].

Q5: Most of the transformers our facility purchases today indicate "Non-PCB" on the equipment's nameplate. Does this mean that companies can still manufacture transformers with 15, 20, or even 30 ppm PCBs in the oil?

A5: No. The manufacture of transformers containing any PCBs 2 ppm or greater is prohibited.

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in transformers is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be processed for use in transformers (under specific conditions) in accordance with the definition of "Excluded PCB Products" [see 761.3 for specific examples]. Also, PCBs at any concentration may be processed (i.e., prepared and/or packaged for distribution in commerce) for purposes of disposal in accordance with the requirements of 761.60 [761.20(c)(2)].

DISTRIBUTION IN COMMERCE (Sale of Transformers)

The distribution in commerce of PCBs, 50 ppm or greater, for use in transformers is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be distributed in commerce for use in transformers (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be distributed in commerce for purposes of disposal in accordance with the requirements of 761.60 [761.20(c)(2)]. Disposal, in this context, means the termination of the useful life of the PCB or PCB-Contaminated Transformer.

The distribution in commerce (sale) of transformers which contain PCBs in concentrations of 50 ppm or greater (known or assumed) for purposes of reuse is allowed provided:

- the transformer was originally sold for use before July 1, 1979;
- the transformer is intact and nonleaking at the time of sale; and

- no PCBs are introduced into the transformer.

Q6: Does this mean that I can sell a PCB or PCB-Contaminated Transformer?

A6: Yes. If the transformer was originally sold for use before July 1, 1979, and is now being sold for reuse (i.e., continued use). Also, the transformer must be totally enclosed, intact and nonleaking. EPA recommends that the buyer be advised that he is purchasing a PCB or PCB-Contaminated Transformer.

Q7: What does intact and nonleaking mean?

A7: Intact and nonleaking means that the transformer is structurally sound with all fluid intact and there are no PCBs on the external surface of the transformer.

Q8: Can I sell drained PCB-Contaminated Transformer carcasses (known or assumed 50-499 ppm) to a rebuilder for reuse as parts in repair and remanufacturing activities?

A8: No. Selling drained 50-499 ppm carcasses for reuse is an unauthorized distribution in commerce of PCBs and is prohibited without an EPA exemption. On the other hand, non-PCB carcasses (less than 50 ppm) can be sold for reuse (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3].

Q9: Can I sell drained PCB-Contaminated Transformer carcasses (known or assumed 50-499 ppm) to a scrap or salvage dealer for metals recovery?

A9: Yes. The sale of drained 50-499 ppm carcasses for scrapping or salvaging is generally considered distribution in commerce for purposes of disposal and is allowed with certain limitations. To qualify as disposal, the scrapping practice must be one which will "...terminate the useful life of PCBs or PCB Items" [761.3]; or, in other words, will destroy any residual PCBs found in the drained carcasses. Salvaging aimed at reclamation of the metals found in the case and coil generally constitutes disposal, because any residual PCBs are destroyed by the high temperatures employed in the smelting process. However, where salvaging merely consists of disassembling the drained equipment to obtain parts for reuse in other equipment, the useful life of the equipment has not been fully terminated and thus is

not considered disposal. In sum, the scrapping/salvaging of 50-499 ppm drained equipment is unregulated to the extent that: (1) the carcass has been drained of all free-flowing liquid, (2) scrapping practices do not result in leaks, spills, or other uncontrolled discharges of PCBs, and (3) any PCB-contaminated components are not reintroduced into commerce.

Q10: Can I export drained PCB-Contaminated Transformers for recovery of metal?

A10: No. PCB-Contaminated Transformers may not be exported for recovery of metal since this is considered disposal unless they have been reclassified to non-PCB status, i.e., to <50 ppm. Section 761.20(c) permits distribution in commerce for purposes of disposal, although this exception refers to domestic disposal only. PCB-Contaminated Transformers may be reclassified to the non-PCB status and then exported for purposes of disposal if the transformer meets the definition of "Excluded PCB Products". (See Chapter X for further explanation of this definition.) The process of reclassification is discussed below under "Servicing and Reclassification Conditions."

EXEMPTIONS TO MANUFACTURE, PROCESS, AND DISTRIBUTE PCBs IN COMMERCE

Exemptions to manufacture, process, and distribute in commerce PCBs may be granted only by rulemaking on a case-by-case basis. The EPA Administrator may set terms and conditions for an exemption and may grant an exemption for not more than one year. EPA interim procedural rules for processing and distribution in commerce exemptions describe the required content of processing and distribution in commerce exemptions petitions and the procedures EPA follows in rulemaking on exemption petitions. Those rules were published in the Federal Register of May 31, 1979 (44 FR 31558) and are codified at 40 CFR 750.30 through 750.41.

MARKING/LABELING

All PCB Transformers must be marked in accordance with EPA marking and labeling requirements [761.40]. All marks/labels must comply with EPA marking formats which specify size, color, and design [761.45].

- All PCB Transformers (500 ppm or greater) must be marked individually with the mark M_L (PCB label)

[761.40(a)(2) and (c)(1)].

- The marking of PCB-Contaminated Transformers (50-499 ppm) is not required [761.40(a)(2)]. If an owner chooses to mark a PCB-Contaminated Transformer, it is recommended that the PCB mark M_L **not** be used.

- Transport vehicles loaded with one or more PCB Transformers (500 ppm or greater) must be marked on each end and each side with the mark M_L (PCB label) [761.40(b)].

- All marks/labels must be placed in a position on the exterior of the transformer so that the mark can be easily seen by persons inspecting the transformer [761.40(h)].

PCB Transformer locations must also be marked/labeled in accordance with 761.40(j).

- As of December 1, 1985, the vault door, machinery room door, fence (including a chain-linked fence), hallway, or other means of access (other than grates and manhole covers) to a PCB Transformer must be marked with the mark M_L (PCB label) [761.40(j)(1)].

A mark other than the mark M_L may be used to identify a PCB Transformer in certain circumstances/locations, provided all of the following conditions are met:

- The program using such an alternative mark was initiated prior to August 15, 1985, and can be substantiated with documentation [761.40(j)(2)(i)].

- 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 can be substantiated with documentation [761.40(j)(2)(ii)].

- The EPA Regional Administrator in the appropriate region was informed in writing of the use of the alternative mark by October 3, 1988 and was provided with documentation that the program began

before August 15, 1985, and documentation that demonstrates that prior to that date the primary fire department knew, accepted, and recognized the meaning of the mark, and included this information in the firefighting training [761.40(j)(2)(iii)].

- The Regional Administrator approved in writing the use of an alternative mark within 30 days of receipt of the documentation of a program [761.40(j)(2)(iv)].

PHASEOUT REQUIREMENTS

- After October 1, 1985, the use and storage for reuse of PCB Transformers (500 ppm or greater) that pose an exposure risk to food or feed is prohibited [761.30(a)(1)]. It is the owner's responsibility to determine whether a PCB Transformer poses an exposure risk to food or feed.

- After October 1, 1985, the installation of PCB Transformers in or near commercial buildings is prohibited. However, as of September 1, 1988, PCB Transformers may be installed in or near commercial buildings in an "Emergency Situation" or "For Purposes of Reclassification" in accordance with 761.30(a)(1)(iii)(B) and (C) and (D).

- In or near a commercial building means inside, on, or within 30 meters of a nonindustrial, non-substation building. Commercial buildings are accessible to the public as well as employees. Examples include schools, hospitals, office buildings, stores, apartment buildings, churches, and transportation terminals and stations.

  Emergency installations, in or near a commercial building, was permitted until October 1, 1990. However, the use of any PCB Transformer installed on such an emergency basis is permitted only for one year from the date of installation or until October 1, 1990, whichever is earlier [761.30(a)(1)(iii)(B)(2)].

  Also, installation of a retrofilled PCB Transformer, in or near a commercial building, was

permitted for reclassification purposes until October 1, 1990. However, the use of a retrofilled PCB Transformer installed for reclassification purposes is limited to 18 months after installation or until October 1, 1990, whichever is earlier [761.30(a)(1)(iii)(C)(2)(i)]. (Note: Retrofilled mineral oil PCB Transformers may be installed in or near a commercial building for reclassification purposes indefinitely after October 1, 1990.)

- Also, as of October 1, 1990, the use of network PCB Transformers with higher secondary voltages (480 volts or greater, including 480/277 volt systems) in or near commercial buildings is prohibited. In addition, network PCB Transformers with higher secondary voltages which are removed from service in accordance with this requirement must either be retrofilled and reclassified or placed into storage for disposal or disposed of [761.30(a)(1)(ii)].

- Lower secondary voltage (below 480 volts) network PCB Transformers (not located in sidewalk vaults) may be used in or near commercial buildings beyond October 1, 1990 provided: (1) they are equipped with electrical protection as specified under 761.30(a)(1)(iv)(A) by October 1, 1990 (see Electrical Protection Requirements); or (2) in lieu of electrical protection, the transformers must be registered in writing with the appropriate EPA Regional Administrator by October 1, 1990. (See Registration Requirements on page I-14.) Subsequently, those PCB Transformers which the owner chooses to "register" versus equip with electrical protection must be removed from service by October 1, 1993 [761.30(a)(1)(iv)(B)].

- As of October 1, 1990, all higher secondary voltage radial PCB Transformers, in use in or near commercial buildings, that have not been removed from service, must be equipped with electrical protection to avoid transformer ruptures caused by high current faults [761.30(a)(1(iv)].

- As of February 25, 1991 all lower secondary voltage radial PCB Transformers, located in or near commercial buildings, that have not been removed from service, must be equipped with

electrical protection to detect sustained high current faults and provide for the complete deenergization of the transformer or the faulted phase of the transformer [761.30(a)(1)(iv)(E)].

- Finally, as of October 1, 1993, all lower secondary voltage (below 480 volts) network PCB Transformers located in sidewalk vaults in or near commercial buildings must be removed from service [761.30(a)(1)(iv)(D)].

Q11: Should a person consider catastrophic failure, such as ruptures, explosions, or fire when trying to determine whether a PCB Transformer poses an exposure risk to food or feed?

A11: One must consider the location of a specific PCB Transformer in relation to food or feed products, and all other available information. If there is a reasonable possibility of contact between PCBs and food or feed, the transformer must be considered a risk. In evaluating the exposure risk, it is useful to consider a hypothetical situation in which PCBs are discharged in any way from the transformer, such as through a rupture or a leak. The question to be asked is whether contact between food or feed and PCBs is reasonably possible. PCB Items that are located adjacent to or above food or feed products pose an exposure risk, unless there is secondary containment or another physical structure that prevents discharges from contaminating the food or feed.

For purposes of determining if a transformer poses exposure risks to food or feed, it is not necessary to consider rare events. The standard to be applied is a reasonable possibility of contamination of food or feed by PCBs.

Q12: The phaseout requirements indicate that certain types of PCB Transformers must be removed from service by a specific date. Can a PCB Transformer be retrofilled and reclassified to meet this phaseout requirement?

A12: Yes. A PCB Transformer that has been retrofilled and reclassified to PCB-contaminated or non-PCB status in accordance with the PCB regulations meets the requirement for phaseout of a PCB Transformer. However, for practical purposes, PCB Transformer owners must allow sufficient time for proper reclassification to reach at least the PCB-contaminated status by the phaseout date.

USE CONDITIONS

PCB and PCB-Contaminated Transformers (other than in railroad locomotives and self-propelled railroad cars) may be used for the remainder of their useful lives subject to the following conditions:

1) PCB Transformer EMERGENCY INSTALLATIONS: Installation of a PCB Transformer in or near a commercial building was permitted when done in accordance with the definition of "Emergency Situation" [761.3] including:

- Those who install PCB Transformers in or near a commercial building in an emergency situation must maintain documentation to support the reason for the emergency installation. This documentation must be completed within 30 days after installation of the PCB Transformer and maintained at the owner's facility [761.30(a)(1)(iii)(B)(1). The documentation must include: the type of transformer that requires replacement, the type of transformer that must be used for replacement, the date of the transformer failure, the date of subsequent replacement, the type of transformer installed as a replacement, and a statement describing actions taken to locate a non-PCB or PCB-Contaminated Transformer replacement [761.30(a)(1)(iii)(B)(1)(i) through (vi)].

- Such emergency installation was permitted until October 1, 1990, and the use of any PCB Transformer installed on such an emergency basis is permitted for 1 year from the date of installation or until October 1, 1990, whichever was earlier [761.30(a)(1)(iii)(B)(2)].

- PCB Transformers installed for emergency purposes may be subsequently reclassified; however, the transformer must be effectively reclassified to a non-PCB or PCB-contaminated status within 1 year after installation or by October 1, 1990, whichever was earlier because the transformer was initially installed in an emergency situation [761.30(a)(1)(iii)(B)(3)].

NOTE: Owners who installed PCB Transformers in emergency situations between October 1, 1985 and September 1, 1988 were required to notify the Regional Administrator in writing by October 3, 1988 of such

installation.

2) PCB Transformer RECLASSIFICATION INSTALLATIONS: Installation of a retrofilled PCB Transformer in or near a commercial building for reclassification purposes is permitted when it is done in accordance with the following:

- Those who install PCB Transformers in or near a commercial building for reclassification purposes must maintain on the owner's premises, completed within 30 days of installation, the following information: the date of installation, the type of transformer installed, the PCB concentration (if known) at the time of installation, and the retrofill and reclassification schedule [761.30(a)(1)(iii)(C)(1)].

The installation of retrofilled PCB Transformers in or near commercial buildings for purposes of reclassification was permitted only until October 1, 1990, with the following exceptions:

The use of a retrofilled PCB Transformer (a PCB Transformer that has been drained and refilled to lower its PCB concentration) installed in or near a commercial building for reclassification purposes was limited to 18 months after installation or until October 1, 1990, whichever is earlier [761.30(a)(1)(iii)(C)(2)(i)].

- Retrofilled mineral oil PCB Transformers may be installed in or near a commercial building for reclassification purposes indefinitely after October 1, 1990 [761.30(a)(1)(iii)(C)(2)(ii)]. (A retrofilled mineral oil PCB Transformer is a mineral oil transformer that was required to be assumed to contain between 50 and 499 ppm PCBs, but was tested and found to contain 500 or more ppm, and which was subsequently drained and refilled to lower its PCB concentration.)

- Once a retrofilled transformer has been installed in or near a commercial building for reclassification purposes, it must be tested 3 months after installation to ascertain the concentration of PCBs. If the PCB concentration is below 50 ppm, the transformer can be reclassified as a non-PCB Transformer. If the PCB concentration is between 50 and 500 ppm, the

transformer can be reclassified as a PCB-Contaminated Transformer. If the PCB concentration remains at 500 ppm or greater, the entire process must be either repeated until the transformer has been reclassified to a non-PCB or PCB-Contaminated Transformer or the transformer must be removed from service. The reclassification process must be completed by October 1, 1990 and adhere to the requirements of 761.30(a)(2)(v) or the transformer must be removed from service [761.30(a)(1)(iii)(C)(2)(iii)].

NOTE: Owners who installed PCB Transformers in or near a commercial building for reclassification purposes between October 1, 1985 and September 1, 1988 were required to notify the Regional Administrator in writing by October 3, 1988 of such installation.

3) ELECTRICAL PROTECTION REQUIREMENTS: As of October 1, 1990, all higher secondary voltage radial PCB Transformers, in use in or near commercial buildings, and lower secondary voltage network PCB Transformers (below 480 volts) in or near commercial buildings (not located in sidewalk vaults) that have not been removed from service, must be equipped with electrical protection to avoid transformer ruptures caused by high current faults. As of February 25, 1991, all lower secondary voltage radial PCB Transformers, in use in or near commercial buildings, must also be equipped with electrical protection to avoid transformer ruptures caused by high current faults [761.30(a)(1)(iv)]. The following types of electrical protection devices are to be used:

- Current-limiting fuses or other equivalent technology must be used to detect sustained high current faults and provide for complete deenergization of the transformer (within several hundredths of a second in the case of higher secondary voltage radial PCB Transformers and within tenths of a second in the case of lower secondary voltage network PCB Transformers) 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 [761.30(a)(1)(iv)(A)].

- All lower secondary voltage network PCB Transformers (below 480 volts) in or near

commercial buildings (not located in sidewalk vaults) which have not been equipped with electrical protection by October 1, 1990 (as specified above) must either be removed from service for disposal or reclassified in accordance with 761.30(a)(2)(v) by October 1, 1993 [761.30(a)(1)(iv)(B)].

- As of February 25, 1991 all lower secondary voltage radial PCB Transformers must be equipped with electrical protection, such as 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 such electrical protection must be completed in accordance with good engineering practices [761.30(a)(1)(iv)(E)].

- As of October 1, 1990, all higher secondary voltage radial PCB Transformers (480 volts and above, including 480/277 volt systems), in use in or near commercial buildings, were required to be equipped with protection to avoid transformer ruptures caused by sustained low current faults [761.30(a)(1)(v)].

Q13: What is the difference between a network and a radial transformer?

A13: Network transformers are hooked up in parallel systems so that if one transformer fails another transformer will pick up the load. A radial transformer is hooked up in a single line method, and if that transformer fails, the load is not picked up by another transformer.

Q14: Why did EPA require phaseout without the option of enhanced electrical protection of network PCB Transformers in or near commercial buildings with high secondary voltages while requiring electrical protection on radial transformers?

A14: EPA determined that network PCB Transformers with higher secondary voltages are particularly likely to be involved in serious fire-related incidents (i.e., those that involve smoke spread into buildings). Therefore, EPA has placed more stringent regulatory measures and controls on these transformers.

4) REGISTRATION REQUIREMENTS: As of December 1, 1985, all PCB Transformers in use (including PCB Transformers in storage for reuse) were required to be registered with fire response personnel with primary jurisdiction (that is, the fire department or fire brigade which would normally be called upon for the initial response to a fire involving the equipment) [761.30(a)(1)(vi)]. Information required to be provided to fire response personnel includes:

- The location of the PCB Transformer(s) including: the address(es) of the building(s) and the physical location(s) of the PCB Transformer(s) on the building site(s); and, for outdoor PCB Transformers, the location of the outdoor substation [761.30(a)(1)(vi)(A)].

- The principal constituent of the dielectric fluid in the transformer(s) (e.g., Askarel PCBs, mineral oil, or silicone oil) [761.30(a)(1)(vi)(B)].

- The name and telephone number of the person to contact in the event of a fire involving the equipment [761.30(a)(1)(vi)(C)].

Q15: Do PCB Transformers being stored for disposal have to be registered with the Fire Department?

A15: No not under TSCA. The requirement to register transformers with fire response personnel is specifically a "use condition." PCB Transformers which have been removed from service and are being stored for disposal do not require registration. Those transformers in storage for reuse, however, must be registered with fire response personnel.

As of December 1, 1985, PCB Transformers in use in or near commercial buildings were required to be registered with building owners. For PCB Transformers located in commercial buildings, PCB Transformer owners were required to register the transformers with the building owner of record. For PCB Transformers located near commercial buildings, PCB Transformer owners were required to register the transformers with all owners of buildings located within 30 meters of the PCB Transformer(s) [761.30(a)(1)(vii)]. Information required to be provided to building owners by PCB Transformer owners includes but is not limited to:

- The specific location of the PCB Transformer(s) [761.30(a)(1)(vii)(A)].

- The principal constituent of the dielectric fluid in the transformer(s) (e.g., Askarel PCBs, mineral oil, or silicone oil) [761.30(a)(1)(vii)(B)].

- The type of transformer installation (e.g., 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) [761.30(a)(1)(vii)(C)].

As of October 1, 1990, owners of lower secondary voltage network PCB Transformers in use in or near commercial buildings but not located in sidewalk vaults, which have not been equipped with electrical protection as specified under 761.30(a)(1)(iv)(A), must register in writing those transformers with the EPA Regional Administrator in the appropriate region [761.30(a)(1)(iv)(C)]. The information required to be provided in writing to the Regional Administrator includes:

- The specific location of the PCB Transformer(s) [761.30(a)(1)(iv)(C)(1)].

- The address(es) of the building(s) and the physical location of the PCB Transformer(s) on the building site(s) [761.30(a)(1)(iv)(C)(2)].

- The identification number(s) of the PCB Transformer(s) [761.30(a)(1)(iv)(C)(3)].

This registration and disposal option is in lieu of providing "electrical protection" as specified under 761.30(a)(1)(iv)(A). Consequently, these lower secondary voltage network PCB Transformers must be removed from service by October 1, 1993 [761.30(a)(1)(iv)(B)].

5) COMBUSTIBLE MATERIALS: As of December 1, 1985, combustible materials include, but are not limited to, paints, solvents, plastics, paper, and sawn wood must not be stored 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 (unpartitioned), within 5 meters of a PCB Transformer [761.30(a)(1)(viii)].

Q16: Does the 5-meter distance requirement apply vertically as well as laterally?

A16: EPA does not require the removal of stored combustibles

within a 5-meter vertical distance provided that there is a continuous permanent ceiling overhead and/or floor below. However, if the floor, for example, is made of metal grates, an electrical fault could still ignite combustibles below, and consequently the 5-meter distance in this situation would apply.

Q17: Would items such as a wooden desk, wooden benches, and other materials used in an office setting be considered stored combustibles and have to be moved at least 5 meters from a PCB Transformer?

A17: No. Since these materials are used on a day-to-day basis, they would not be considered "stored combustibles" and consequently are not required to be moved. Office equipment stored as surplus would be considered stored combustibles.

Q18: If a PCB Transformer is surrounded by a chain-link fence, is the transformer considered "enclosed" for purposes of the stored combustibles requirement?

A18: No. A PCB Transformer surrounded by a chain-link fence is not considered "enclosed" for the purpose of this requirement, and therefore, combustible materials must not be stored within 5 meters of the transformer. The reason for this is that a chain-link fence would not provide a barrier to prevent an electrical fault or a transformer fire from potentially reaching nearby combustible materials. On the other hand, a PCB Transformer surrounded by 2- to 3-hour fire-resistant walls would be reasonably protected from controllable or less severe fires.

Q19: Does the combustible materials requirement apply to a PCB Transformer which has been placed into storage for disposal?

A19: No. The combustible materials requirement is specifically a PCB Transformer "use condition." Combustible materials do not have to be removed from close proximity to a PCB Transformer which is being stored for disposal.

6) INSPECTIONS: A visual inspection of each PCB Transformer (500 ppm or greater) in use or stored for reuse shall be performed at least once every 3 months. These inspections may take place any time during the 3 months: 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 investigation for any leak or dielectric fluid on or around the transformer. The extent

of the visual inspections will depend on the physical constraints of each transformer installation and should not require an electrical shutdown of the transformer being inspected [761.30(a)(1)(ix)].

A reduced visual inspection frequency of at least once every 12 months applies to PCB Transformers that utilize either of the following risk reduction measures. These inspections may take place any time during the calendar year as long as there is a minimum of 180 days between inspections [761.30(a)(1)(xiii)]. PCB Transformers which may be inspected annually versus quarterly include:

- PCB Transformers which have impervious, undrained, secondary containment capacity of at least 100 percent of the total dielectric fluid volume of all transformers so contained [761.30(a)(1)(xiii)(A)].

- PCB Transformers which have been tested and found to contain less than 60,000 ppm PCBs (after 3 months of in-service use if the transformer has been serviced for purposes of reducing the PCB concentration) [761.30(a)(1)(xiii)(B)].

Records of inspection and maintenance history shall be maintained at least 3 years after disposing of the transformer and shall be made available for inspection, upon request by EPA [761.30(a)(1)(xii)]. Such records shall contain the following information for each PCB Transformer [761.30(a)(1)(xii)(A) through (H)]:

- Its location.

- The date of each visual inspection and the date that leak was discovered, if different from the inspection date.

- The person performing the inspection.

- The location of any leak(s).

- An estimate of the amount of dielectric fluid released from any leak.

- The date of any cleanup, containment, repair, or replacement.

- A description of any cleanup, containment, or

repair performed.

- The results of any containment and daily inspection required for uncorrected active leaks.

7) LEAKING PCB TRANSFORMERS: If a PCB Transformer is found to have a leak which results in any quantity of PCBs running off or about to run off the external surface of the transformer, then the transformer must be repaired or replaced to eliminate the source of the leak. In all cases, any leaking material must be cleaned up and properly disposed of according to disposal requirements of 761.60. Cleanup of the released PCBs must be initiated as soon as possible, but in no case later than 48 hours of its discovery. 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 [761.30(a)(1)(x)]. Cleanup should be done in accordance with the PCB Spill Cleanup Policy. See Chapter XIV.

8) FIRE-RELATED INCIDENTS: 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 (toll-free 1-800-424-8802; in Washington, D.C. 202-426-2675). A fire-related incident is defined as any incident involving a PCB Transformer which 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. Information must be provided regarding the type of PCB Transformer installation involved in the fire-related incident (e.g., high or low secondary voltage network transformer, high or low secondary voltage simple radial system, expanded radial system, primary selective system, primary loop system, or secondary selective system or other systems) and the readily ascertainable cause of the fire-related incident (e.g., high current fault in the primary or secondary or low current fault in secondary).

The owner of the PCB Transformer must also take measures as soon as practically and safely possible to contain and control any potential releases of PCBs and incomplete combustion products into water [761.30(a)(1)(xi)]. These measures include, but are not limited to:

- The blocking of all floor drains in the vicinity of the transformer [761.30(a)(1)(xi)(A)].

- The containment of water runoff [761.30(a)(1)(xi)(B)].

- The control and treatment (prior to release) of any water used in subsequent cleanup operations [761.30(a)(1)(xi)(C)].

9) DISCOVERY OF A MINERAL OIL PCB TRANSFORMER: In the event a mineral oil transformer, assumed to contain less than 500 ppm of PCBs as provided in 761.3, is tested and found to be contaminated at 500 ppm or greater PCBs ("PCB Transformer"), the unit is subject to all the requirements for PCB Transformers in 40 CFR part 761 and efforts must be initiated immediately to bring the transformer into compliance in accordance with the following schedule [761.30(a)(1)(xv)(A) through (J)]:

- Report fire-related incidents, effective immediately after discovery.

- Mark/label the PCB Transformer within 7 days after discovery.

- Mark/label the vault door, machinery room door, fence, hallway, or other means of access to the PCB Transformer within 7 days after discovery.

- Register the PCB Transformer in writing with fire response personnel with primary jurisdiction and with the commercial building owner, within 30 days of discovery.

- Install electrical protective equipment on a radial PCB Transformer and a non-sidewalk vault, lower secondary voltage network PCB Transformer in or near a commercial building within 18 months of discovery or by October 1, 1990, whichever is later. **NOTE**: This section of the regulation was amended in the Federal Register of November 26, 1990 (55 FR 49043) to indicate the February 25, 1991 deadline for installing electrical protection on lower secondary voltage radial PCB Transformers as indicated at 761.30(a)(1)(iv)(E).

- Remove a non-sidewalk vault, lower secondary voltage network PCB Transformer in or near a commercial building, if electrical protective equipment is not installed, within 18 months of discovery or by October 1, 1993, whichever is

later.

- Remove a lower secondary voltage network PCB Transformer located in a sidewalk vault in or near a commercial building, within 18 months of discovery or by October 1, 1993, whichever is later.

- Retrofill and reclassify a high secondary voltage radial PCB Transformer or a lower or higher secondary voltage network PCB Transformer, located in other than a sidewalk vault in or near a commercial building, within 18 months or by October 1, 1990, whichever is later (lower secondary voltage PCB Transformers by February 25, 1991 -- see **NOTE** above). This is an option in lieu of installing electrical protective equipment on a radial or lower secondary voltage network PCB Transformer located in other than a sidewalk vault or of removing a higher secondary voltage network PCB Transformer or a lower secondary voltage network PCB Transformer, located in a sidewalk vault, from service.

- Retrofill and reclassify a lower secondary voltage network PCB Transformer, located in a sidewalk vault, in or near a commercial building within 18 months or by October 1, 1993, whichever is later. This is an option in lieu of installing electrical protective equipment or removing the transformer from service.

- Retrofill and reclassify a higher secondary voltage network PCB Transformer, located in a sidewalk vault, in or near a commercial building within 18 months or by October 1, 1990, whichever is later. This is an option in lieu of other requirements.

SERVICING AND RECLASSIFICATION CONDITIONS

The processing of PCB and PCB-Contaminated Transformers is limited to servicing activities. These servicing activities include: draining and refilling, topping off, repairing, and retrofilling for reclassification [761.30(a)(2)].

The processing and distribution in commerce of PCBs, 50 ppm or greater, for purposes of servicing and repairing a

customer's equipment is prohibited without an EPA exemption [761.30(a)(2)(vii)]. However, an exemption is not required to service your own PCB or PCB-Contaminated Transformer with the PCB or PCB-contaminated fluid you already own, in accordance with the regulations. Also, you can service a customer's transformers if you use non-PCB or PCB-free fluid; and, you are allowed to refill a customer's transformers with the same fluid that came out of the transformers, regardless of PCB concentration.

The processing (servicing) of non-PCB Transformers with non-PCB fluids and/or components is allowed without restriction.

A PCB Transformer may be reclassified to a PCB-contaminated or non-PCB Transformer by draining, refilling, and otherwise servicing the unit. In order to be reclassified, the transformer's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-contaminated level) or less than 50 ppm PCB (for conversion to non-PCB level) after a minimum of 3 months of inservice use subsequent to the last servicing conducted for the purposes of reducing the PCB concentration in the transformer. Inservice means that the transformer is used electrically under loaded conditions that raise the temperature of the dielectric fluid to at least 50° Centigrade. The Director of the Chemical Management Division may grant, without further rulemaking, approval for the use of alternative methods that simulate the loaded conditions of inservice use [761.30(a)(2)(v)].

Q20: How long do I have to keep the transformer fluid at 50°C?

A20: The regulations do not give a specific amount of time for keeping the temperature at 50°C, but the intent of the regulation is to simulate the normal use of a transformer. For example, if during normal use, a transformer reaches 50°C on Tuesdays and Thursdays for an hour per day, that is how long the transformer should be at 50°C to reclassify the transformer.

NOTE: EPA is has proposed alternative methods of reclassification for both PCB and PCB-Contaminated Transformers in the Federal Register of November 18, 1993 (58 FR 60970).

The following conditions also apply to service activities:

- Removing the coil from a PCB Transformer (500 ppm or greater) is prohibited [761.30(a)(2)(ii)].

- PCB-Contaminated Transformers may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB [761.30(a)(2)(i)].

- PCBs, 50 ppm or greater, removed during servicing must be either reused as dielectric fluid or disposed of in accordance with EPA requirements [761.30(a)(2)(iii)].

- PCBs from PCB Transformers must not be mixed with or added to dielectric fluid from PCB-Contaminated Transformers [761.30(a)(2)(iii)].

- If dielectric fluid containing less than 500 ppm PCBs is mixed with fluid containing 500 ppm or greater PCBs, then the resulting mixture must not be used as dielectric fluid in any electrical equipment. The entire mixture must be considered to be greater than 500 ppm PCBs and must be disposed of in an incinerator that meets EPA requirements [761.30(a)(2)(iv)].

- Any dielectric fluid containing 50 ppm or greater PCBs used for servicing transformers must be stored in accordance with the storage for disposal requirements [761.30(a)(2)(vi)].

STORAGE FOR REUSE

Transformers containing PCBs at any concentration may be stored for reuse. While there are no time limitations on this storage, transformers 50 ppm or greater (known or assumed) which are stored for reuse should be in a condition suitable for reuse. Equipment that is not suitable for reuse will be considered improperly disposed of. Units that are in storage for reuse are considered by EPA to be "in-service" for purposes of the regulations. Also, as of October 1, 1985, the storage for reuse of PCB Transformers (500 ppm or greater) that pose an exposure risk to food or feed is prohibited [761.30(a)(1)(i)].

Q21: How long can I keep a "burned-out" or "nonfunctional"

transformer in storage for reuse if I plan on repairing it and using it later?

A21: EPA does not require nonfunctional transformers (regardless of PCB concentration) to be placed into "storage for disposal" if you intend to repair and reuse the item. However, EPA may have grounds to enforce against lengthy "storage for reuse" of equipment which is not reasonably expected to be placed back into service. The owner should be able to demonstrate good faith compliance with the intent of the storage for disposal requirements and complete any required servicing or repairs within a reasonable amount of time. Any item that is damaged and cannot be repaired for regulatory or technical reasons must be disposed of or placed into storage for disposal.

STORAGE FOR DISPOSAL

All PCB and PCB-Contaminated Transformers must be dated when placed into storage for disposal [761.65(c)(8)] and must be removed from storage and disposed of within one year [761.65(a)].

The facility used to store PCB and PCB-Contaminated Transformers must comply with the "storage for disposal" requirements [761.65(b)(1)]. See the chapter titled "PCB Storage Requirements" for specific requirements.

Non-leaking PCB and PCB-Contaminated Transformers may be stored temporarily by the generator in an area that does not comply with the requirements for a PCB storage facility for up to 30 days from the date of their removal from service for disposal, provided that a notation is attached to each transformer indicating the dates the equipment was removed from service [761.65(c)(1)(i)], and placed into storage for disposal [761.65(c)(8)].

Leaking PCB and PCB-Contaminated Transformers which are placed in PCB Containers that comply with DOT specifications [761.65(c)(6)] with sufficient sorbent materials to absorb any liquid PCBs, may also be temporarily stored by the generator for up to 30 days provided that a notation is attached to the container indicating the dates the transformer was removed from service [761.65(c)(1)(ii)], and placed into storage for disposal [761.65(c)(8)]. Each container or drum used to store leaking PCB Items must be marked in accordance with EPA marking and labeling requirements [761.40(a)(1)].

Nonleaking and structurally undamaged PCB-Contaminated Transformers, that have not been drained of free-flowing dielectric fluid, may also be stored on pallets next to a PCB storage facility which meets the requirements for storage for disposal. This type of storage is permitted only when the storage facility has immediately available unfilled storage space equal to 10 percent of the volume of the equipment stored outside the facility. The equipment stored outside the facility must be inspected for leaks weekly [761.65(c)(2)], and a notation must be attached to each unit indicating the date the equipment was removed from service [761.65(c)(1)] and placed into storage for disposal [761.65(c)(8)].

Commercial storers now must seek approval to operate and demonstrate financial responsibility for closure of the facility under the new provisions of the Notification and Manifesting Rule which was published in the Federal Register on December 21, 1989. See Chapters XII and XIX for further details on commercial storage facility approvals and other aspects of the Notification and Manifesting Rule.

DISPOSAL

PCB Transformers (500 ppm or greater) must be disposed of as follows:

- In an incinerator that complies with 40 CFR 761.70.

- In a chemical waste landfill which complies with 761.75 provided that: the transformer is first drained of all free-flowing liquid, filled with solvent, allowed to stand for at least 18 hours and then drained thoroughly. PCB liquids that are removed shall be disposed of by incineration under 761.60(a). Solvents may include kerosene, xylene, toluene and other solvents in which PCBs are readily soluble. Precautionary measures should be taken, however, that the solvent flushing procedure is conducted in accordance with applicable safety and health standards as required by Federal or State regulations [761.60(b)(1)(i)(B)].

- The PCB liquids that are removed, including the flushing solvent, must be disposed of in an incinerator that complies with 40 CFR 761.70, or by an alternative EPA approved and permitted

disposal method in accordance with 761.60(e).

PCB-Contaminated Transformers (50-499 ppm PCBs) shall be disposed of as follows:

- By draining all free-flowing liquid from the transformer and disposing of the liquid in an incinerator that complies with 40 CFR 761.70; or, in a chemical waste landfill that complies with 761.75, if information is provided to the owner or operator of the chemical waste landfill that shows that the waste does not exceed 500 ppm PCBs and is not an ignitable waste as described in 761.75(b)(8)(iii); or, in an approved high efficiency boiler that complies with 761.65(a)(2)(iii); or, by an alternative EPA approved and permitted disposal method that complies with 761.60(e) [(761.60(b)(4)].

The disposal of the drained contaminated equipment carcass is not regulated [761.60(b)(5)(ii)]; however, drained PCB-Contaminated Transformer carcasses cannot be sold (distributed in commerce) for use as parts and components in repair or rebuilding activities. (See Distribution in Commerce.)

Non-PCB Transformers (less than 50 ppm PCB) may be disposed of with the following considerations:

- There are no PCB disposal requirements for non-PCB Transformers. However, certain reuse restrictions apply to the less than 50 ppm PCB fluid. Waste oil with any detectable concentration of PCBs cannot be used as a sealant, coating, or dust control agent [761.20(d)]; and also, can only be burned for energy recovery in specific combustion facilities described in 761.20(e)(1). See the chapter on "Disposal" for a detailed discussion of the disposal of non-PCB waste oils.

RECORDKEEPING

The Notification and Manifesting Rule (FR December 21, 1990) adopts additional recordkeeping and reporting requirements

at 761.180(a) and (b) to complete the tracking system for PCB wastes. The rule requires that the manifests themselves be retained as records by waste handlers, and it requires reporting to EPA in the event of irregularities in the transport of regulated wastes. These reports depend largely on information derived from particular manifests.

Three of the waste tracking reports are modeled after their RCRA counterparts. The rule requires "Exception Reports" to be filed with EPA whenever a generator has not received verification of delivery of PCB waste within 45 days. Also, a "Discrepancy Report" is required of storage or disposal facilities in those cases where the waste actually delivered to them does not correspond exactly with the types and quantities described on the manifest. Third, an "Unmanifested Waste Report" is required of disposers or storers in those instances in which waste arrives at a facility unaccompanied by a required manifest. All of these reports may be thought of as "red flags" to EPA of possible disposal violations. They provide the means for generators and disposers to "enforce" the day-to-day workings of the manifest system for EPA.

The rule adds one additional reporting requirement for which there is no counterpart under RCRA. This requirement is the "One-year Exception Report," intended to bolster EPA's ability to enforce the requirement under TSCA regulations that limits storage of PCBs prior to disposal to no more than one year. Information on when items of PCB waste were removed from service for disposal is included with the manifests that accompany the waste from generation to disposal. Disposers are required to certify the date of disposal of PCB waste manifested to them, and in the event more than one year has elapsed since the PCBs were removed from service for disposal, a report must be filed with EPA.

Finally, the rule adds several amendments to the existing PCB recordkeeping provisions that concern the Annual Document requirements for the users, storers, and disposers of PCBs. The most significant of these amendments is the requirement that each disposer and commercial storer of PCB waste submit by July 15 of each year an annual report, which is a summary of the previous calendar year's PCB activity at the facility. The report will be submitted to the appropriate EPA Regional Administrator. See Chapter XV, Recordkeeping and Reporting, for further details on the recordkeeping requirements under the Notification and Manifesting Rule.

Testing data, inventories, servicing and reclassification records, spill reports, and disposal records should be maintained for all PCB and PCB-Contaminated Transformers. Specific types and quantities of PCB's [761.180(a)] form the basis of an Annual Document Log which must be prepared each year and maintained for at least 3 years after the facility ceases using or storing PCBs and PCB Items in quantities prescribed in section 761.180(a). Annual Records (manifests and certificates of disposal) shall be maintained for the same period. The Annual Document for 1989 shall cover the period from January 1, 1989 to February 5, 1990 (the effective date of the final rule). See Chapter XV, "Recordkeeping and Reporting" for a detailed discussion of Annual Records.

SPILLS

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 a PCB or PCB-Contaminated Transformer is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement for penalties or further cleanup. See the chapter on "PCB Spill Cleanup Policy" for specific measures.

PCB spills involving 1 lb. or more of pure PCBs (generally 1 pint of Askarel) must be reported to the National Response Center at (800) 424-8802. Spills of 10 lbs. or more of pure PCBs (generally a gallon) must be reported to the appropriate regional EPA office. Failure to notify the NRC under CERCLA can lead to civil penalties under Section 109 or, under Section 103, criminal fines and imprisonment. Any spill should be reported when people or animals can come into direct and uncontrolled contact with PCBs.

Measures must immediately be taken to control the spread of the spill. Any threats to water should be given highest priority. Water and other complicated spills should be cleaned up by trained personnel to levels set by the appropriate EPA Regional Administrator. Organizations that frequently handle PCBs should develop spill contingency plans and conduct training for dealing with spills.

Once a spill is contained, cleanup measures can begin. EPA requires cleanup of PCBs to different levels depending on spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of PCBs initially

spilled, and the nature and size of the population potentially at risk of exposure. While the PCB Spill Cleanup Policy applies to the majority of situations, exceptional circumstances may require additional cleanup at the direction of the EPA regional office. A detailed description of the specific reporting, cleanup, recordkeeping, and post-cleanup sampling requirements is found in the chapter on "PCB Spill Cleanup Policy."

Other minor weeping from PCB or PCB-Contaminated Transformer bushings and seams, not covered by the spill policy, is still considered improper disposal of PCBs and compels responsible parties to take actions to rectify the exposure of humans and the environment to PCBs.

Q22: Do records and/or spill reports have to be kept for all PCB or PCB-Contaminated Transformers which rupture?

A22: The PCB Spill Cleanup Policy specifies certain recordkeeping requirements when a PCB or PCB-Contaminated Transformer ruptures or spills. See the chapter on "PCB Spill Cleanup Policy" for specific spill recordkeeping requirements.

CHAPTER I
PART B

TRANSFORMERS (RAILROAD)

PART B

RAILROAD TRANSFORMERS

EPA defines railroad transformers (in the same manner as nonrailroad transformers) in three basic categories -- "PCB," "PCB-contaminated," and "Non-PCB." Also, the "assumption rules" discussed earlier in this chapter (see page I-1) apply to untested railroad transformers. The following conditions and restrictions apply to PCBs in transformers in railroad locomotives or railroad self-propelled cars (railroad transformers).

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for use in railroad transformers is prohibited without an EPA exemption [TSCA section 6(e) and 761.20(b)].

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in railroad transformers is prohibited without an EPA exemption [TSCA section 6(e) and 761.20(c)]. However, PCBs at concentrations less than 50 ppm may be processed for use in railroad transformers (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be processed (i.e., prepared and/or packaged for distribution in commerce) for purposes of disposal [TSCA section 6(e) and 761.20(c)(2)].

DISTRIBUTION IN COMMERCE (Sale of Railroad Transformers)

The distribution in commerce of PCBs, 50 ppm or greater, for use in railroad transformers is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be distributed in commerce for use in railroad transformers (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be distributed in commerce for purposes of disposal in accordance with the requirements of 761.60 [761.20(c)(2)]. Disposal, in this context, means the termination of the useful life of the PCB or PCB-contaminated railroad transformer.

The distribution in commerce (sale) of railroad transformers which contain PCBs in concentrations of 50 ppm or greater (known or assumed) for purposes of reuse is allowed only if:

- the unit was originally sold for use before July 1, 1979;
- the unit is intact and nonleaking at the time of sale; and
- no PCBs are introduced into the unit.

Q24: Does this mean that I can sell a PCB or PCB-contaminated railroad transformer?

A24: Yes. If the railroad transformer was originally sold for use before July 1, 1979, and is now being sold for resale or reuse (i.e., continued use). Also, the railroad transformer must be intact and nonleaking. EPA recommends that the buyer be advised that he is purchasing a PCB or PCB-contaminated unit.

Q25: What does intact and nonleaking mean?

A25: Intact and nonleaking means that the railroad transformer has all fluid intact and there are no PCBs on the external surface of the equipment.

Q26: Can I sell drained PCB-contaminated railroad transformers (known or assumed 50-499 ppm) to a scrap or salvage dealer for metals recovery?

A26: Yes. The sale of drained 50-499 ppm carcasses for scrapping or salvaging is generally considered distribution in commerce for purposes of disposal and is allowed with certain limitations. To qualify as disposal, the scrapping

practice must be one which will "...terminate the useful life of PCBs or PCB Items" [761.3]; or, in other words, will destroy any residual PCBs found in the drained carcasses. Salvaging aimed at reclamation of the metals found in the case and coil generally constitutes disposal, because any residual PCBs are destroyed by the high temperatures employed in the smelting process. However, where salvaging consists of disassembling the drained equipment to obtain parts for reuse in other equipment, the useful life of the equipment has not been fully terminated and thus is not considered disposal. In sum, the scrapping/salvaging of 50-499 ppm drained equipment is unregulated to the extent that: (1) scrapping practices do not result in leaks, spills, or other uncontrolled discharges of PCBs, and (2) any PCB-contaminated components are not reintroduced into commerce.

EXEMPTIONS TO MANUFACTURE, PROCESS, AND DISTRIBUTE PCBs IN COMMERCE

Exemptions to manufacture, process, and distribute in commerce PCBs in railroad transformers may be granted only by rulemaking on a case-by-case basis. The EPA Administrator may set terms and conditions for an exemption and may grant an exemption for not more than one year. EPA interim procedural rules for processing and distribution in commerce exemptions describe the required content of processing and distribution in commerce exemptions petitions and the procedures EPA follows in rulemaking on exemption petitions. Those rules were published in the Federal Register of May 31, 1979 (44 FR 31558) and are codified at 40 CFR 750.30 through 750.41.

MARKING/LABELING

All PCB railroad transformers (500 ppm or greater) must be marked in accordance with EPA marking and labeling requirements [761.40]. All marks/labels must comply with EPA marking formats which specify size, color, and design [761.45].

- All PCB railroad transformers (500 ppm or greater) must be marked individually with the Mark M_L (PCB label) [761.40(a)(2) and (c)(1)].

- The marking of PCB-contaminated railroad transformers (50-499 ppm) is not required [761.40(c)(1)].

- Transport vehicles loaded with one or more PCB Transformers (500 ppm or greater) must be marked on each end and each side with the mark M_L (PCB label) [761.40(b)].

- All marks/labels must be placed in a position on the exterior of the transformer and/or transport vehicle so that the mark can be easily seen by persons inspecting the transformer [761.40(h)].

PCB Transformer locations must also be marked/labeled in accordance with 761.40(j).

- As of December 1, 1985, the vault door, machinery room door, fence, hallway, or other means of access (other than grates and manhole covers) to a PCB Transformer must be marked with the mark M_L (PCB label) [761.40(j(1)].

USE AND PERFORMANCE REQUIREMENTS

As of July 1, 1986, the use of railroad transformers containing dielectric fluids with a PCB concentration greater than 1,000 ppm was prohibited [761.30(b)(1)(vi)].

Q27: What should be done if a railroad organization discovers that an inservice railroad transformer contains over 1,000 ppm PCBs today?

A27: The continued use of railroad transformers containing over 1,000 ppm PCBs was prohibited in 1986. Consequently, if a railroad transformer were discovered today as containing more than 1,000 ppm PCBs, the owner/operator of the transformer would be out of compliance with the regulations. The Regional EPA Administrator should be contacted immediately, and steps should be taken to bring the equipment into compliance as soon as possible.

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 conducted for the purpose of reducing the PCB concentration in

the dielectric fluid in the transformer [761.30(b)(1)(vii)(A)]; and, between 12 and 24 months after each servicing [761.30(b)(1)(vii)(B)].

- The data obtained as a result of the above servicing shall be retained until January 1, 1991 [761.30(b)(1)(vii)(C)].

SERVICING AND RECLASSIFICATION CONDITIONS

The processing of PCB and PCB-contaminated railroad transformers is limited to servicing activities. These servicing activities include: draining and refilling, topping off, repairing, and retrofilling for reclassification [761.30(a)(2)].

- Railroad transformers may be serviced only with dielectric fluid containing less than 1,000 ppm PCBs [761.30(b)(2)(iii)]; except, if the coil is removed from the casing of a railroad transformer (e.g., the transformer is rebuilt), the railroad transformer may not be refilled with dielectric fluid containing a PCB concentration greater than 50 ppm [761.30(b)(2)(i)].

- Dielectric fluid may be filtered through activated carbon or otherwise industrially processed for the purpose of reducing the PCB concentration in the fluid [761.30(b)(2)(iv)].

- Any PCB dielectric fluid that is used to service PCB railroad transformers (500 ppm or greater) must be stored in accordance with the storage for disposal requirements at 761.65 [761.30(b)(1)(v)].

A PCB railroad 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. In order to be reclassified, the railroad transformer's dielectric fluid must contain less than 500-ppm PCBs for conversion to PCB contaminated status, or less than 50 ppm PCBs for conversion to non-PCB status after a minimum of three months of inservice use subsequent to the last servicing conducted for the purpose of reducing the PCB concentration in the transformer [761.30(b)(2)(vii)].

STORAGE FOR REUSE

The storage for reuse conditions for PCB and PCB-contaminated railroad transformers are identical to the storage for reuse conditions for nonrailroad transformers as outlined earlier in this chapter. (See page I-22.)

STORAGE FOR DISPOSAL

The storage for disposal requirements for PCB and PCB-contaminated railroad transformers are identical to the storage for disposal requirements for nonrailroad transformers as outlined earlier in this chapter. (See page I-22.)

DISPOSAL

The disposal requirements for PCB and PCB-contaminated railroad transformers are identical to the disposal requirements for nonrailroad transformers as outlined earlier in this chapter. (See page I-23.)

SPILLS

Spills from railroad transformers are treated the same as spills from non-railroad transformers. Please see the earlier discussion of spills in this chapter (See page I-26).

CHAPTER II

CAPACITORS
A. LARGE

- CAPACITORS -

Capacitors are defined at 40 CFR 761.3 in two basic categories--"small" and "large." A "small capacitor" is defined as containing less than 1.36 kilograms (3 lbs.) of dielectric fluid. A "large capacitor" is defined as containing 1.36 kilograms (3 lbs.) or more of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown.

- A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kilograms (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 kilograms (3 lbs.) of dielectric fluid.

- A capacitor whose total volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kilograms (3 lbs.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kilograms (9 lbs.).

Q1: Our rural utility has discovered numerous small capacitors in phase converters (commonly referred to as "add-a-phases") which are utilized in various applications, specifically on farm irrigation systems. In most cases, these add-a-phase type units contain several small, independent capacitors (less than 3 lbs. each) banded together within a single housing compartment. Does EPA classify capacitors such as these as small, individual capacitors, or must the combined volume of the small capacitors be totaled and treated as one large capacitor?

A1: Capacitors are classified according to the weight of fluid in each individual unit, not by the total weight of a group.

PART A

LARGE CAPACITORS

Large PCB Capacitors are used extensively by electric utilities and other various industries. Large capacitors are commonly used to improve the voltage and power factor of electric power systems. Virtually all capacitors manufactured prior to 1978 were filled with PCB dielectric fluids generically known as "Askarels." (See the "Introduction" chapter for a list of "Common Trade Names.") These "Askarel" dielectric fluids generally range from 75-100 percent PCB concentration. After July 1, 1979, the manufacture of capacitors using these PCB dielectric fluids (Askarels) was prohibited.

Large PCB Capacitors are classified based upon voltage ratings [761.3]. A large capacitor that is rated for operation at 2,000 volts (A.C. or D.C.) or above is termed a "large, high-voltage capacitor," while a large capacitor that is rated for operation below 2,000 volts is termed a "large, low-voltage capacitor." Most TSCA requirements for large PCB Capacitors are identical for both with the exception of certain marking/labeling requirements which vary depending upon "high" or "low" voltage. Also, the use of PCB-contaminated Capacitors has not been phased out.

After October 1, 1988, the use of large PCB Capacitors is prohibited unless the capacitor is used within a restricted access area [761.30(l)]. Large PCB Capacitors which are located in certain "restricted-access" areas may be used for the remainder of their useful life. There are basically two types of "restricted-access" areas which are acceptable for the continued use of large PCB Capacitors beyond October 1, 1988: (1) restricted-access electrical substations, and (2) contained and restricted-access indoor installations.

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. Release of PCBs from capacitors in these substations

beyond the confines of the substations are extremely limited. Outdoor, fenced or walled-in suburban locations that perform R&D activities on large capacitors but do not transmit or distribute electric power are still considered to be restricted access areas.

A "contained and restricted-access indoor installation" restricts public access and has an adequate roof, walls, and floor to contain any release of PCBs within the indoor location. Release of PCBs in these facilities also presents very limited exposure potential.

The majority of large PCB Capacitors which are not in a restricted-access location are primarily found on utility poles throughout electric service areas. The exposure risks associated with these capacitors vary due to their widespread use. These capacitor installations are used in residential neighborhoods, industrial areas, rural areas, public areas (such as shopping centers, schools, etc.), and near waterways. Because of their location, these PCB Capacitors have a greater potential for exposing humans, animals, and the environment during their use than do other large PCB Capacitors; therefore, their use was prohibited as of October 1, 1988 [761.30(l)].

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for use in large capacitors is prohibited without an EPA exemption [761.20(b)].

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in large capacitors is prohibited without an EPA exemption [761.20(c) and (4)]. However, PCBs at any concentration may be processed (i.e., prepared and/or packaged for distribution in commerce) for purposes of disposal [761.20(c)(2)].

DISTRIBUTION IN COMMERCE (Sale of Large PCB Capacitors)

The distribution in commerce of PCBs, 50 ppm or greater, for use in large capacitors is prohibited without an EPA exemption [761.20(c)]. PCBs at any concentration may be

distributed in commerce for purposes of disposal [761.20(c)(2)]. Disposal, in this context, means the termination of the useful life of the PCB or PCB-Contaminated Capacitors.

The distribution in commerce (sale) of large capacitors which contain PCBs in concentrations of 50 ppm or greater for purposes of reuse is allowed provided:

- the capacitor was originally sold for use before July 1, 1979;
- the capacitor is intact and nonleaking at the time of sale; and
- no PCBs are introduced into the capacitor.

Q2: Does this mean that I can sell a PCB Capacitor?

A2: Yes, if the capacitor was originally sold for use before July 1, 1979, and is now being sold for continued use. Also, the capacitor must be intact and nonleaking. EPA recommends that the buyer be advised that he is purchasing a PCB Capacitor. The capacitor must be marked in accordance with 761.40.

Q3: What does intact and nonleaking mean?

A3: Intact and nonleaking means that the capacitor is structurally sound with all fluid intact and there are no PCBs on the external surface of the capacitor.

EXEMPTIONS TO MANUFACTURE, PROCESS, AND DISTRIBUTE PCBs IN COMMERCE

Exemptions to manufacture, process, and distribute in commerce PCB Capacitors or PCB dielectric fluids for use in PCB Capacitors may be granted only by rulemaking on a case-by-case basis. The EPA Administrator may set terms and conditions for an exemption and may grant an exemption for not more than one year. EPA interim procedural rules for processing and distribution in commerce exemptions describe the required content of processing and distribution in commerce exemption petitions and the procedures EPA follows in rulemaking on exemption petitions. Those rules were

published in the Federal Register of May 31, 1979 (44 FR 31558) and are codified at 40 CFR 750.30 through 750.41.

MARKING/LABELING

All large PCB Capacitors must be marked in accordance with EPA marking and labeling requirements [761.40]. All marks/labels must comply with EPA marking formats which specify size, color, and design [761.45].

- All PCB large, high-voltage capacitors which are in service (including stored for reuse) must be marked individually with the mark M_L (PCB label).

- All PCB large, high-voltage capacitors and equipment containing a large high-voltage capacitor must be marked individually with the mark M_L (PCB label) at the time of removal from use if not already marked [761.40(a)(3) and (4)].

- PCB large, low-voltage capacitors are not required to be marked while in service, but must be marked at the time of removal from use [761.40(a)(5)].

- All marks/labels must be placed in a position on the exterior of the capacitor so that the marks can be easily seen by persons inspecting the capacitor(s) [761.40(h)].

PHASEOUT REQUIREMENTS

- After October 1, 1988, the use and storage for reuse of PCB large, high- and low-voltage capacitors which pose an exposure risk to food or feed is prohibited [761.30(1)].

- After October 1, 1988, the use of all PCB large, high- and low-voltage capacitors is prohibited unless the capacitor is used within a restricted access electrical substation or in a contained and restricted-access indoor installation. A contained and restricted-access indoor installation must have adequate roof, walls, and floor to contain any release of PCBs within the indoor location [761.30(1)]. Examples are

manufacturing facilities and commercial building vaults.

Q4: Can large PCB Capacitors be used for the remainder of their useful life provided they are located in a restricted access electrical substation?

A4: Yes. However, if the location of the PCB Capacitors within the substation still poses an exposure risk to food or feed, the continued use of these units was prohibited after October 1, 1988.

Q5: Can large PCB Capacitors be used for the remainder of their useful life if they are located in an electrical power plant?

A5: Only if the power plant is a restricted access building and has adequate roof, walls, and floors which would contain any release of PCBs within the power plant.

USE CONDITIONS

Large PCB Capacitors may be used for the remainder of their useful lives only in accordance with the phaseout requirements of 761.30(l). Non-PCB Capacitors are unregulated for use.

- **Inspections**: No recorded maintenance inspections are required for large PCB Capacitors. However, ruptures, leaks, and other uncontrolled discharges from PCB Capacitors are considered improper disposal of PCBs, and should be cleaned up in accordance with the PCB Spill Cleanup Policy.

SERVICING CONDITIONS

Since there is no specific authorization for servicing lage PCB Capacitors their servicing is prohibited without an EPA exemption.

CAPACITORS THAT POSE AN EXPOSURE RISK TO FOOD OR FEED

The use and storage for reuse of large PCB Capacitors that pose an exposure risk to food or feed became prohibited after October 1, 1988 [761.30(l)(1)].

Q6: Should a person consider catastrophic failure, such as ruptures, explosions, or fire when trying to determine whether a large PCB Capacitor poses an exposure risk to food or feed?

A6: One must consider the location of a specific PCB Capacitor in relation to food or feed products, and all other available information. If there is a reasonable possibility of contact between PCBs and food or feed as a result of a discharge, the capacitor must be considered a risk. In evaluating the exposure risk, it is useful to consider a hypothetical situation in which PCBs are discharged in any way from the capacitor, such as through a rupture or a leak. The question to be asked is whether contact between food or feed and PCBs is reasonably possible. PCB Capacitors that are located adjacent to or above food or feed products pose an exposure risk, unless there is secondary containment or another physical structure that prevents PCB discharges from contaminating the food or feed. The standard to be applied is a reasonable possibility of contamination of food or feed by PCBs.

STORAGE FOR REUSE

Large capacitors containing PCBs in any concentration may be stored for reuse provided the storage does not pose an exposure risk to food or feed. There are no time limitations on this storage; however, the large PCB Capacitors which are being stored for reuse must be in a condition suitable for reuse, and the owner of the capacitors should be able to demonstrate a reasonable need to store spare capacitors. Large PCB Capacitors stored for reuse must be stored in a restricted access electrical substation or other restricted access indoor installation. Capacitors stored for reuse are considered by EPA to be "in service" for purposes of the regulations. These capacitors must be handled as in use capacitors and all requirements including marking, recordkeeping, and disposal remain the same.

STORAGE FOR DISPOSAL

All large PCB Capacitors must be dated when placed into storage for disposal and must be removed from storage and disposed of within one year [761.65(a)].

Q7: Does each large PCB Capacitor in storage for disposal have to be dated, or would a storage log or list indicating these dates be sufficient?

A7: Each PCB Article, including individual PCB Capacitors, must be dated on the article when placed into storage for disposal [761.65(c)(8)]. Consequently, the mere listing of dates on a storage log or list is not sufficient.

The facility used to store large PCB Capacitors for disposal must comply with the "storage for disposal" requirements [761.65(b)(1)]. See Chapter XII on "PCB Storage Requirements" for specific requirements.

Nonleaking large PCB Capacitors may be stored temporarily by the generator in an area that does not comply with the requirements for a PCB storage facility for up to 30 days from the date of their removal from service for disposal, provided that a notation is attached to each capacitor indicating the date the capacitor was removed from service [761.65(c)(1)(i)] and placed into storage for disposal [761.65(c)(8)].

Leaking PCB Capacitors which are placed in PCB Containers that comply with DOT specification [761.65(c)(6)] with sufficient sorbent materials to absorb any liquid PCBs, may also be temporarily stored by the generator for up to 30 days provided that a notation is attached to the container indicating the date the capacitor was removed from service [761.65(c)(1)(ii)] and placed into storage for disposal [761.65(c)(8)]. Each container or drum used to store leaking PCB Capacitors must be marked in accordance with EPA marking and labeling requirements [761.40(a)(1)].

Nonleaking and structurally undamaged PCB large, high-voltage capacitors may also be stored for more than 30 days on pallets next to a PCB storage facility which meets the requirements for storage for disposal. This type of storage is permitted only when the storage facility has immediately available unfilled storage space equal to 10 percent of the volume of capacitors and equipment stored outside the facility. The capacitors stored outside the facility must

be inspected for leaks weekly [761.65(c)(2)], and a notation must be attached to each capacitor indicating the date the capacitor was removed from service [761.65(c)(1)] and placed into storage for disposal [761.65(c)(8)]. If a weekly visual inspection reveals a capacitor is leaking, having the required available space within the storage area allows immediate containment of the leak by moving the capacitor into the storage area.

DISPOSAL

Large PCB Capacitors must be disposed of as follows:

- In an incinerator that complies with 40 CFR 761.70.
- By an alternative EPA approved and permitted method in accordance with 761.60(e).

RECORDKEEPING

Owners or operators of facilities which use or store 50 or more large PCB Capacitors shall develop and maintain records on the disposition of the PCB Capacitors [761.180(a)]. These records shall consist of (1) the Annual Records and (2) the Annual Document Log which must be prepared each year by the facility and must be maintained for at least 3 years after the facility ceases using or storing PCBs and PCB Items in the prescibed quantities. See Chapter XV, "Recordkeeping and Reporting" for a detailed discussion of Annual Document Logs and Annual Records.

Q8: In my records, must I convert the weight of each PCB Capacitor to kilograms?

A8: Yes, the weight of PCB Capacitors is required to be converted to kilograms using the total weight of the PCB Capacitor and its contents.

Q9: Do I have to keep written inspections for PCB Capacitors?

A9: Except for capacitors temporarilly stored outside a storage facility, no recorded maintenance inspections are required for PCB Capacitors. However, ruptures, leaks, and other uncontrolled discharges from PCB Capacitors are considered improper disposal of PCBs.

SPILLS

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 a large PCB Capacitor is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement for penalties or further cleanup under TSCA. See Chapter XIV on "PCB Spill Cleanup Policy" for specific measures.

PCB Spills involving 1 lb. or more of PCBs (generally 1 pint of Askarel) must be reported to the National Response Center (NRC) at (800) 424-8802. Spills involving 10 lbs. or more of PCBs (generally 1 gallon of Askarel) must also be reported to the appropriate regional EPA office. Failure to notify the NRC under CERCLA can lead to civil penalties under Section 109 or, under Section 103, criminal fines and imprisonment. Any spill should be reported when people or animals can come into direct and uncontrolled contact with PCBs.

Measures must immediately be taken to control the spread of the spill. Any threats to water should be given highest priority. Water and other complicated spills should be cleaned up by trained personnel to levels set by the appropriate EPA Regional Administrator. Organizations who frequently handle PCBs should develop spill contingency plans and conduct training for dealing with spills.

Once a spill is contained, cleanup measures can begin. EPA requires cleanup of PCBs to different levels depending on spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. While the PCB spill cleanup policy applies to the majority of situations, exceptional circumstances may require additional cleanup at the direction of the EPA regional office. A detailed description of the specific reporting, cleanup, recordkeeping, and post-cleanup sampling requirements is found in Chapter XIV on "PCB Spill Cleanup Policy."

Other minor weeping from PCB Capacitor bushings and seams not covered by the spill policy is still considered improper disposal of PCBs and the provisions of the PCB Spill Cleanup Policy should be followed.

Q10: Do records and/or spill reports have to be kept for all PCB Capacitors which rupture?

A10: The PCB Cleanup Policy specifies certain recordkeeping when a PCB Capacitor ruptures or spills. See the chapter on "PCB Spill Cleanup Policy" for specific spill recordkeeping.

PART B

SMALL CAPACITORS

Small capacitors are those which contain less than 3 lbs. of dielectric fluids. They commonly contain between 0.1 and 0.6 pound of PCBs and are used in fluorescent light ballasts, household appliances, and industrial equipment. In most applications, the equipment containing the small capacitor in its circuitry cannot function without it.

Since these capacitors contain small quantities of dielectric fluid and significant amounts of absorbent material such as paper, and because many of these capacitors are encapsulated, large amounts of PCBs are not released from these capacitors during their use in appliances or other equipment containing small capacitors. Therefore, exposure risks to humans, food, feed, water, or the environment from the use of these capacitors are generally low. EPA has determined that the use of small capacitors containing PCBs is not unreasonable because of their low risk compared with the benefits from the use of millions of pieces of electronic equipment and consumer products; billions of dollars in replacement costs; and the lack of practical cost-effective risk reduction measures.

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for use in small capacitors is prohibited [761.20(b)].

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in small capacitors is prohibited without an EPA exemption [761.20(c)]. PCBs in any concentration may be processed (i.e., prepared and/or packaged for distribution in commerce) for purposes of disposal in accordance with the requirements of 761.60 [761.20(c)(2) and (4)].

DISTRIBUTION IN COMMERCE (Sale of Small PCB Capacitors)

The distribution in commerce of PCBs, 50 ppm or greater, for use in small capacitors is prohibited without an EPA

exemption [761.20(c)]. PCBs at any concentration may be distributed in commerce for purposes of disposal in accordance with the requirements of 761.60 [761.20(c)(2) and (4)]. Disposal means the termination of the useful life of the PCB or PCB-Contaminated Capacitors.

The distribution in commerce (sale) of a small PCB Capacitor for reuse or resale is allowed provided:

- the small capacitor was originally sold for use before July 1, 1979;
- the small capacitor is intact and nonleaking at the time of sale; and
- no PCBs are introduced into the small capacitor.

MARKING/LABELING

Small PCB Capacitors are not required to be marked or labeled while in service or when removed from service for disposal.

However, as of January 1, 1979, all PCB Equipment containing a small PCB Capacitor was to be marked at the time of manufacture with the statement: "This equipment contains PCB Capacitor(s)." The mark was to be the same size as the mark M_L [761.40(d)].

Each small capacitor used in alternating circuits and each fluorescent bulb manufactured between July 1, 1978 and July 1, 1998 that does not contain PCBs must be marked by the manufacturer "No PCBs" [761.40(g)].

USE CONDITIONS

EPA has not placed any restrictions on the use of small PCB Capacitors.

STORAGE FOR REUSE

There are no restrictions or limitations on the storage for reuse of small PCB Capacitors provided that the capacitors are in a condition suitable for reuse.

STORAGE FOR DISPOSAL

There are no time restrictions or storage requirements on the storage for disposal of small PCB Capacitors provided that they are intact and nonleaking [761.60(b)(6)]. However, a PCB Container (e.g., drum) which contains leaking small PCB Capacitors must be marked, dated, and placed into proper storage in accordance with the regulatory requirements for a "PCB Container," and must be removed from storage and disposed of within one year [761.65(a)]. Also, any small PCB Capacitor owned by any person, who manufactures, or at any time manufactured, PCB Capacitors or PCB Equipment and acquired the PCB Capacitor in the course of such manufacturing, must be stored in accordance with 761.65(b).

DISPOSAL

Small PCB Capacitors and Equipment containing small PCB Capacitors may be disposed of as municipal solid waste [761.60(b)(2)(ii)], except that any small PCB Capacitor owned by any person who manufactures or at any time manufactured PCB Capacitors or PCB Equipment and acquired the PCB Capacitors in the course of such manufacturing must be disposed of as follows [761.60(b)(2)(iv)]:

- In an incinerator that complies with 40 CFR 761.70.
- By an alternative EPA approved and permitted method.

EPA recommends that where several small PCB Capacitors are gathered together in drums or containers, that the disposal method be determined by the combined amount of PCBs in the several capacitors. That is, if 3 lbs. or more of PCBs are contained in the several small capacitors, the Agency recommends that the several small capacitors be disposed of in accordance with the requirements for large capacitors. Also, EPA encourages users of large amounts of small PCB Capacitors to institute voluntary collection programs to dispose of the small capacitors in PCB Incinerators. [Readers are advised to contact their PCB Regonal Coordinator for the policy on the disposal of large numbers of small capacitors.]

SPILLS

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 a small PCB Capacitor is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement for penalties or further cleanup. See the chapter on "PCB Spill Cleanup Policy" for specific measures.

Other minor weeping from PCB Capacitor bushings and seams not covered by the spill policy is still considered improper disposal of PCBs and it is recommended that the provisions of the Spill Cleanup Policy be followed.

CHAPTER III

HEAT TRANSFER AND HYDRAULIC SYSTEMS

- HEAT TRANSFER AND HYDRAULIC SYSTEMS -

PCBs were manufactured for use in heat transfer (Therminol-66) and hydraulic (Pydraul) systems that were utilized in a variety of industries until 1972. Heat transfer systems, containing PCB fluids, were used in the inorganic chemical, organic chemical, plastics and synthetics, and petroleum refining industries. The aluminum, copper, iron, and steel forming industries used hydraulic systems with commercial Aroclor PCB fluids. High PCB levels apparently remained in some systems until at least 1979. In addition, some unknown quantity of unused PCB fluids was probably kept by facilities after production ceased in 1972 and was used for topping-off hydraulic and heat transfer systems.

Under section 6(e)(2) of TSCA, EPA may authorize the use of PCBs if the Agency finds that the use will not present an unreasonable risk to human health or the environment. EPA has authorized the use of PCBs in heat transfer and hydraulic systems at concentrations less than 50 ppm (under specific conditions) for the remainder of their useful lives [761.30(d) and (e)].

Numerous substitutes for PCBs have been used in heat transfer and hydraulic systems to lower the PCB concentration levels to less than 50 ppm. Included among the chemical compounds used in non-PCB substitutes for hydraulic fluid are phosphate esters, water/glycol solutions, and water/oil emulsions. In addition, various non-PCB heat transfer fluids are available. These include modified esters, synthetic hydrocarbons, polyaromatic compounds, partially hydrogenated and mixed terphenyls, and blends of diphenyls.

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for use in heat transfer and hydraulic systems is prohibited without an EPA exemption [761.20(b)].

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in heat transfer and hydraulic systems is prohibited without an EPA exemption [761.20(c)]. PCBs at concentrations less than 50

ppm may be processed for use in heat transfer and hydraulic systems (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be processed (i.e.,

prepared or packaged for distribution in commerce) for purposes of disposal [761.20(c)(2)].

DISTRIBUTION IN COMMERCE (Sale of Heat Transfer & Hydraulic Systems)

The distribution in commerce (sale) of a heat transfer or hydraulic system for reuse or resale which is contaminated with PCBs (50 ppm or greater) is prohibited without an EPA exemption [761.20(c)]. However, PCBs at any concentration may be distributed in commerce for purposes of disposal [761.20(c)(2)]. Disposal means the termination of the useful life of the heat transfer or hydraulic system [761.60(a) and (b)(3)].

EXEMPTIONS TO MANUFACTURE, PROCESS, AND DISTRIBUTE PCBs IN COMMERCE

Exemptions to manufacture, process, and distribute in commerce PCBs in heat transfer and hydraulic systems or PCB fluids for use in heat transfer and hydraulic systems may be granted only by rulemaking on a case-by-case basis. The EPA Administrator may set terms and conditions for an exemption and may grant an exemption for not more than one year. EPA interim procedural rules for processing and distribution in commerce exemptions describe the required content of processing and distribution in commerce exemptions petitions and the procedures EPA follows in rulemaking on exemption petitions. Those rules were published in the Federal Register of May 31, 1979 (44 FR 31558) and are codified at 40 CFR 750.30 through 750.41.

MARKING/LABELING

All heat transfer and hydraulic systems with PCB concentrations of 50 ppm or greater must be marked in accordance with EPA marking and labeling requirements [761.40]. All marks/labels must comply with EPA marking formats which specify size, color, and design [761.45]. All marks/labels must be placed in a position on the exterior of

the system so that the mark/label can be easily read by persons inspecting or servicing the system [761.40(h)]. The use of a heat transfer or hydraulic system with PCB concentrations of 50 ppm or greater became unlawful after July 1, 1984.

USE AND SERVICING CONDITIONS

In 1979, EPA authorized the continued use of PCBs in concentrations of 50 ppm or greater in heat transfer and hydraulic systems in conjunction with a required retrofill program. These use authorizations expired on July 1, 1984. EPA assumed that the conditions of those use authorizations, which required retrofilling all contaminated systems with non-PCB fluids, would reduce the PCB concentration levels in all of those systems to below 50 ppm by July 1, 1984.

When the 50 ppm regulatory cutoff was overturned in 1984 (as a consequence of EDF v. EPA), the status of reducing PCB concentrations in heat transfer and hydraulic systems to less than 50 ppm was unclear. The July 10, 1984 ruling authorized the continued use of heat transfer and hydraulic systems with PCB concentrations less than 50 ppm (under specific conditions) for the remainder of their useful lives. However, the use of heat transfer and hydraulic systems with PCB concentrations of 50 ppm or greater became unlawful after July 1, 1984.

As of July 1, 1984, intentionally manufactured PCBs at concentrations less than 50 ppm may be used in heat transfer and hydraulic systems for the remainder of their useful lives if the following requirements are met:

- Each owner of a heat transfer or hydraulic system that ever contained 50 ppm or greater PCBs was required to test his/her system for its PCB concentration by no later than November 1, 1979, and retest the system at least annually thereafter [761.30(d) and (e)].

- Within 6 months of a test indicating the system's fluid contains 50 ppm or greater PCBs, the system must be drained of PCBs and refilled with non-PCB fluid containing less than 50 ppm PCB [761.30(d) and (e)].

- All subsequent required annual retests must be performed at least 3 months after the most recent fluid refilling. Then, when a test shows that the PCB concentration in the system is less than 50 ppm, further testing is no longer required [761.30(d) and (e)].

- After November 1, 1979, no heat transfer system that was used in the manufacture or processing of any food, drug, cosmetic or device, as defined in Section 201 of the Federal Food, Drug, and

  Cosmetic Act, could contain transfer fluid with 50 ppm or greater PCBs [761.30(d)(3)].

- Servicing, including topping-off, heat transfer and hydraulic systems with fluids containing PCB concentrations 50 ppm or greater is prohibited [761.30(d) and (e)].

- All testing data must be retained for 5 years after the heat transfer or hydraulic system reaches less than 50 ppm PCBs [761.30(d)&(e)].

Q1: Do Viton^{R} elastomer gloves still have to be provided by system owners and worn by system maintenance personnel?

A1: EPA has concluded that the Viton^{R} glove requirement is not necessary to protect against any unreasonable risks presented by the continued use of authorized (less than 50 ppm) heat transfer and hydraulic systems. Consequently, EPA amended the July 10, 1984 rule in the Federal Register of June 27, 1988, by deleting the Viton^{R} glove requirements from the use authorizations. The use of impermeable gloves to prevent dermal contact with PCB containing fluids may be warranted, but the choice of such protection will be dependent upon such factors as duration of exposure, concentration of PCBs, and the permeability of the glove material.

STORAGE FOR REUSE

The continued use and storage for reuse of heat transfer and hydraulic systems containing 50 ppm or greater PCBs is prohibited without an EPA exemption [761.20(a)].

EPA has not placed any restrictions on the storage for reuse

of non-PCB (less than 50 ppm) heat transfer and hydraulic systems.

STORAGE FOR DISPOSAL

EPA has not placed any restrictions on the storage for disposal of non-PCB (less than 50 ppm) heat transfer and hydraulic systems.

DISPOSAL

EPA has not placed any restrictions on the disposal of non-PCB (less than 50 ppm) heat transfer and hydraulic systems. However, non-PCB fluids (2-49 ppm) generated from the draining of a non-PCB heat transfer or hydraulic system can only be burned for energy recovery in accordance with EPA restrictions on burning used oils as outlined under 761.20(e)(3). See the chapter on "Excluded PCB Products" for a detailed discussion on burning non-PCB used oils.

RECORDKEEPING

Each owner of a heat transfer or hydraulic system that ever contained PCBs at concentrations of 50 ppm or greater must maintain all servicing and retrofill records as well as all PCB testing data for 5 years after the PCB concentration in the system was reduced to less than 50 ppm [761.30(d)(5) and (e)(5)].

Records should be maintained pursuant to 761.180 for all PCB liquids (50 ppm or greater) which are drained from heat transfer and hydraulic systems for disposal. In addition, all owners of heat transfer and hydraulic systems who at one time have stored at least 45 kilograms (99.4 pounds) of PCB liquids in PCB Containers must develop and maintain Annual Document Logs and Annual Records for each calendar year [761.180(a)]. See Chapter XV, "Recordkeeping and Reporting" for a detailed discussion of Annual Document Logs and Annual Records.

SPILLS

Spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs ay concentrations of

50 ppm or greater running off or about to run off the external surface of a heat transfer or hydraulic system is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement of penalties of further cleanup. See the chapter on "PCB Spill Cleanup Policy" for specific measures.

Other minor weeping from heat transfer and hydraulic systems with PCB concentrations 50 ppm or greater is still considered improper disposal of PCBs and it is recommended that the provisions of the Spill Cleanup Policy be followed.

CHAPTER IV

NATURAL GAS PIPELINES

- NATURAL GAS PIPELINES -

PCB contamination in natural gas pipeline air compressors, natural gas compressors, and natural gas pipeline liquids is believed to have occurred through several sources. The major sources of contamination are thought to be: lubricating oils (Turbinol) used in the natural gas air compressors; "fogging" of the pipe lines with an oil vapor to minimize the entrainment of dust and other particles in the pipeline system and migration of PCBs from contaminated lines into other systems. By the 1960s, fogging of pipelines was virtually nonexistent due to improved dry filters and the replacement of cast iron pipe with welded steel pipes. PCBs have not been used as lubricating oils in compressors since the 1970s. **Note:** EPA continues to develop guidance for the practical use and disposal of PCB contaminated pipelines. The Federal Register should be reviewed for any new information regading pipelines and related facilities.

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for use in natural gas pipelines is prohibited without an EPA exemption [761.20(b)].

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in natural gas pipelines is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be processed for use in natural gas pipelines (under limited specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be processed (i.e., prepared and/or packaged for distribution in commerce) for purposes of disposal in accordance with the requirements of 761.60 [761.20(c)(2)].

DISTRIBUTION IN COMMERCE

The distribution in commerce of PCBs, 50 ppm or greater, for use in natural gas pipelines is prohibited without an EPA exemption [761.20(c)]. However, pipes and other reusable

materials from natural gas pipelines historically with PCB concentrations less than 50 ppm may be distributed in commerce for reuse (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. However, EPA reommends that any such pipe should not be used in connection with water supply sources, drainage ditches, or in other circumstances where food or feed could become contaminated. While such applications may not violate TSCA, they may result in potential civil liability for damages for the supplier or violations of other Federal or State regulations. PCBs at any concentration may be distributed in commerce for purposes of disposal in accordance with the requirements of 761.60 [761.20(c)(2)].

USE CONDITIONS

EPA has determined that the use of PCBs in natural gas pipeline compressors (compressors used for the transmission of gas) and in the liquid found in natural gas pipelines at concentrations of less than 50 ppm (not as a result of dilution) does not present an unreasonable risk to human health or the environment. Therefore, EPA has authorized the continued use of PCBs at concentrations less than 50 ppm in natural gas pipeline compressors and liquids indefinitely [761.30(i)], provided that the compressors and the pipelines are marked/labeled in accordance with EPA marking requirements [761.45(a)].

MARKING/LABELING

Natural gas pipeline compressors and pipelines which are contaminated with PCBs, regardless of concentration, must be marked/labeled in compliance with EPA marking requirements [761.30(i)]. All marks/labels must comply with EPA marking formats which specify size, color, and design [761.45]. All marks/labels must be placed in a position on the compressor so that the mark can be easily read by persons inspecting or servicing the compressor [761.40(h)].

STORAGE FOR DISPOSAL

Liquids and/or solids (e.g., rags, dirt, debris, etc.) contaminated with PCBs (50 ppm or greater) must be placed into proper containers for storage for disposal. All PCB waste (50 ppm or greater) generated from natural gas

pipelines (such as used pipe, liquids contaminated with PCBs and solids/debris contaminated with PCBs) must be stored in accordance with EPA storage requirements under 761.65. The above PCB Articles (used pipe) and PCB Containers (liquids and/or solids) 50 ppm or greater must be dated when placed into storage for disposal [761.65(c)(8)] and must be removed from storage and disposed of within one year [761.65(a)].

The facility used to store PCB waste (50 ppm or greater) generated from natural gas pipelines must comply with the storage for disposal requirements under 761.65(b)(1). See the chapter on "PCB Storage Requirements" for specific requirements.

Nonleaking PCB Articles may be stored temporarily by the generator in an area that does not comply with the requirements for a PCB storage facility for up to 30 days from the date of their removal from service for disposal, provided that a notation is attached to each article indicating the dates the article was removed from service [761.65(c)(1)(i)], and placed into storage for disposal [761.65(c)(8)].

DISPOSAL

All PCB waste (50 ppm or greater) including used pipe, condensate, and other liquids and solids contaminated with PCBs at levels 50 ppm or greater, must be disposed of in accordance with EPA disposal requirements under 761.60.

All condensate removed from the pipe is liquid PCBs and must be disposed of according to its concentration. At concentrations less than 50 ppm, liquid PCBs are not regulated for disposal under TSCA unless such PCBs are diluted to circumvent disposal regulations [761.1(b). Disposal of condensate containing less than 50 ppm PCB (undiluted) is regulated under RCRA. Liquid PCBs in concentrations between 50 and 500 ppm must be incinerated, disposed of in a TSCA chemical waste landfill, a high efficiency boiler, or by an alternative disposal method [761.60(a)(1), (4) and (e)].

Pipeline is regarded as a "PCB Article" as defined under 761.3. It must be disposed of according to its concentration of PCBs under 761.60(b)(5). Accordingly, removed pipe with PCB concentrations greater than 500 ppm

must be disposed of in a TSCA incinerator, a TSCA chemical waste landfill, or by an alternative disposal method [761.60(e)]. Pipeline with concentrations greater than 500 ppm may not be abandoned. Any pipe with a PCB concentration between 50 and 500 ppm is not regulated for disposal after all free flowing liquid has been removed. This means that the pipe can be either abandoned in place, disposed of in a municipal waste landfill, or smelted for recycling.

AIR COMPRESSORS

PCBs were used in lubricating oils that were added to air compressors in the 1970s and early 1980s. These air compressors were used to start natural gas compressors and consisted of separate piping and receiver tanks as part of the system. The air compressor system is regarded by EPA for regulatory purposes as distinct from the natural gas compressor itself.

EPA views the PCB contamination in air compressor system piping and receiving tanks as PCB contamination that results because of a spill from or in proximity to a PCB Item. Accordingly, if the spill is cleaned up pursuant to EPA regional standards, the use of the pipes and tanks would be authorized under 761.20(c)(5). Otherwise the contamination constitutes an unauthorized use.

REUSE OF PIPE AT LESS THAN 50 PPM PCBs

The reuse of natural gas pipe at less than 50 ppm PCBs is conditioned on the assumption that the three caveats in the definition of"Excluded PCB Products" (section 761.3) are met. These are that the products or source of the products containing less than 50 ppm PCBs were (1) legally manufactured, processed, distributed in commerce, or used before October 1, 1984, (2) 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 (3) not the result of dilution, or leaks or spills of PCBs at concentrations over 50 ppm.

QA: Once it is determined that the natural gas pipe I own is

less than 50 ppm PCBs, and not as a result of dilution, may I sell this pipe for another use?

A1: Yes, if it has been determined that the pipe was historically contaminated with less than 50 ppm PCBs or reduced to less than 50 ppm PCBs through an authorized process. If the pipeline system has an interconnection with another pipeline system that has been contaminated at 50 ppm or greater, the pipeline is presumed to have PCB contamination as a result of dilution and may not be reused. If this is the case, the pipeline company has two options: (1) decontaminate the pipeline pursuant to a consent decree or (2) obtain an approval for an alternate disposal technology permit. If it is determined that the pipe may be sold for another use under the TSCA regulations, you are not relieved of any additional requirements under other Federal or State statutes. For example, if the pipe were to be used as conduits for drinking water they would have to be cleaned to a level of non-detect according to the provisions of the Safe Drinking Water Act.

CHAPTER V

ELECTROMAGNETS SWITCHES AND VOLTAGE REGULATORS

- ELECTROMAGNETS, SWITCHES, AND VOLTAGE REGULATORS -

Electromagnets are primarily used over conveyer belts to remove iron from nonmagnetic commodities. Electromagnets designed to contain PCBs are used in areas such as coal mines, coal preparation plants, and coal-fired generating stations.

Voltage regulators and switches (including sectionalizers and motor starters) are used by electric utilities and industry to control, transmit, and distribute electric power efficiently. Almost all of this electrical equipment is mineral oil-filled and not designed to contain PCB dielectric fluid. However, many voltage regulators, switches, and also electromagnets have become contaminated with PCBs through historic maintenance and servicing activities. In addition, voltage regulators are particularly susceptible to PCB contamination as they often contain a small PCB starter capacitor which, if it leaks or ruptures, is likely to contaminate the regulator's mineral oil dielectric fluid.

Electromagnets, switches, and voltage regulators which contain mineral oil dielectric fluid are not required to be tested for PCBs. It is very important to note, however, that oil-filled electromagnets, switches, and voltage regulators, whose PCB concentration is unknown, must be assumed to be PCB-Contaminated Electrical Equipment (50-499 ppm) and must be treated as such. This "assumption rule" effectively applies to all regulatory requirements relating to the equipment including: use and servicing, leaks and spills, sale for reuse, storage for disposal, and disposal.

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for use in electromagnets, switches, and voltage regulators is prohibited without an EPA exemption [761.20(b)].

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in electromagnets, switches, or voltage regulators is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be processed for

use in electromagnets, switches, and voltage regulators (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be processed (i.e., prepared and/or packaged for distribution in commerce) for purposes of disposal [761.20(c)(2)].

DISTRIBUTION IN COMMERCE (Sale of Electromagnets, Switches, and Voltage Regulators)

The distribution in commerce of PCBs, 50 ppm or greater, for use in electromagnets, switches, and voltage regulators is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be distributed in commerce for use in electromagnets, switches, and voltage regulators (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be distributed in commerce for purposes of disposal [761.20(c)(2)]. Disposal means the termination of the useful life of the PCB or PCB-contaminated electromagnet, switch, or voltage regulator.

The distribution in commerce (sale) of electromagnets, switches, and voltage regulators which contain PCBs in concentrations of 50 ppm or greater (known or assumed) for purposes of reuse or resale is allowed provided:

- the unit was originally sold for use before July 1, 1979;
- the unit is intact and nonleaking at the time of sale; and
- no PCBs are introduced into the unit.

Q1: Does this mean that I can sell a PCB or PCB-contaminated voltage regulator, switch, or electromagnet?

A1: Yes. If the equipment was originally sold for use before July 1, 1979, and is now being sold for reuse or resale (i.e., continued use). Also, the unit must be intact and nonleaking. EPA recommends that the buyer be advised that he is purchasing a PCB or PCB-contaminated unit.

Q2: What does intact and nonleaking mean?

A2: Intact and nonleaking means that the equipment is

structurally sound with all fluid intact and there are no PCBs on the external surface of the equipment.

Q3: Can I sell drained PCB-contaminated voltage regulators and/or switch carcasses (known or assumed 50-499 ppm) to a rebuilder for reuse as parts in repair and remanufacturing activities?

A3: No. Selling drained (50-499 ppm) carcasses for reuse is an unauthorized distribution in commerce of PCBs and is prohibited without an EPA exemption. On the other hand, non-PCB carcasses (less than 50 ppm) can be sold for reuse (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3].

Q4: Can I sell drained PCB-contaminated voltage regulators and/or switch carcasses (known or assumed 50-499 ppm) to a scrap or salvage dealer for metals recovery?

A4: Yes. The sale of drained (50-499 ppm) carcasses for scrapping or salvaging is generally considered distribution in commerce for purposes of disposal and is allowed with certain limitations. To qualify as disposal, the scrapping practice must be one which will "...terminate the useful life of PCBs or PCB Items" [761.3]; or, in other words, will destroy any residual PCBs found in the drained carcasses. Salvaging aimed at reclamation of the metals found in the case and coil generally constitutes disposal, because any residual PCBs are destroyed by the high temperatures employed in the smelting process. However, where salvaging consists of disassembling the drained equipment to obtain parts for reuse in other equipment, the useful life of the equipment has not been fully terminated and thus is not considered disposal. In sum, the scrapping/salvaging of 50-499 ppm drained equipment is unregulated to the extent that: (1) scrapping practices do not result in leaks, spills, or other uncontrolled discharges of PCBs, and (2) any PCB-contaminated components are not reintroduced into commerce.

EXEMPTIONS TO MANUFACTURE, PROCESS, AND DISTRIBUTE PCBs IN COMMERCE

Exemptions to manufacture, process, and distribute in commerce PCBs in electromagnets, switches, and voltage regulators may be granted only by rulemaking on a case-by-case basis. The EPA Administrator may set terms and conditions for an exemption and may grant an exemption for

not more than one year. EPA interim procedural rules for processing and distribution in commerce exemptions describe the required content of processing and distribution in commerce exemptions petitions and the procedures EPA follows in rulemaking on exemption petitions. Those rules were published in the Federal Register of May 31, 1979 (44 FR 31558) and are codified at 40 CFR 750.30 through 750.41.

MARKING/LABELING

Marking/labeling of electromagnets, switches, and voltage regulators, regardless of PCB concentration, is not required.

PHASEOUT REQUIREMENTS

After October 1, 1985, the use and storage for reuse of any PCB electromagnet (500 ppm or greater) which poses an exposure risk to food or feed is prohibited [761.30(h)(1)]. It is the owner's responsibility to determine whether the electromagnet poses an exposure risk to food or feed.

USE CONDITIONS

PCB and PCB-contaminated electromagnets, switches, and voltage regulators may be used for the remainder of their useful lives. No recorded maintenance inspections are required for PCB or PCB-contaminated electromagnets, switches, or voltage regulators.

SERVICING AND RECLASSIFICATION CONDITIONS

The processing of PCB and PCB-contaminated electromagnets, switches, and voltage regulators is limited to servicing activities. These servicing activities include: draining and refilling, topping off, repairing, and retrofilling for reclassification [761.30(h)(2)]. **Note:** In the Federal Register of Novemeber 18, 1993 (58 FR 60970) EPA proposed amendments to the reclassification provisions for this type of equipment.

The processing and distribution in commerce of PCBs, 50 ppm or greater, for purposes of servicing and repairing a customer's equipment is prohibited without an EPA exemption [761.30(h)(2)(vii)]. However, an exemption is not required to service your own PCB or PCB-contaminated electromagnet, switch, or voltage regulator with the PCB or PCB-contaminated fluid you already own, in accordance with the regulations. Also, you can service a customer's unit if you use non-PCB or PCB-free fluid; and, you are allowed to refill a customer's unit with the same fluid that came out of the unit, regardless of PCB concentration.

The processing (servicing) for non-PCB electromagnets, switches, and voltage regulators with non-PCB fluids and/or components is allowed without restriction.

A PCB electromagnet, switch, or voltage regulator may be reclassified to a PCB-contaminated or non-PCB unit by draining, refilling, and otherwise servicing the unit. In order to reclassify, the unit's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-contaminated level) or less than 50 ppm PCB (for conversion to non-PCB level) after a minimum of 3 months of in-service use subsequent to the last servicing conducted for the purposes of reducing the PCB concentration in the unit. In-service means that the unit is used electrically under loaded conditions [761.30(h)(2)(v)].

The following conditions also apply to service activities:

- Removing the coil from PCB electromagnets, switches, or voltage regulators (500 ppm or greater) is prohibited [761.30(h)(2)(i)].

- PCB-contaminated electromagnets, switches, and voltage regulators may be serviced (including rebuilding) only with dielectric fluid containing less than 500 ppm PCB [761.30(h)(2)(ii)].

- PCBs, 50 ppm or greater, removed during servicing must be either reused as dielectric fluid or disposed of in accordance with EPA requirements [761.30(h)(2)(iii)].

- PCBs from PCB electromagnets, switches, and voltage regulators must not be mixed with or added to dielectric fluid from PCB-contaminated electromagnets, switches, and voltage regulators

[761.30(h)(2)(iii)].

- If dielectric fluid containing less than 500 ppm PCBs is mixed with fluid containing 500 ppm or greater PCBs, then the resulting mixture must not be used as dielectric fluid in any electrical equipment. The entire mixture must be considered to be greater than 500 ppm PCBs and must be disposed of in an incinerator that meets EPA requirements [761.30(h)(2)(iv)].

- Any dielectric fluid containing 50 ppm or greater PCBs used for servicing electromagnets, switches, or voltage regulators must be stored in accordance with the storage for disposal requirements [761.30 (h)(2)(vi)].

Q5: Is an electromagnet, switch, or voltage regulator required to reach 50° Centigrade during the 90-day in-service period for proper reclassification?

A5: No. Unlike transformers, there is no 50° Centigrade requirement for reclassification of these types of equipment [761.30(h)(2)(v)].

Q6: Do electromagnets, switches, and voltage regulators have to be tested to determine their PCB concentration? If not, how can I determine the equipment's classification?

A6: The regulations do not require that these types of equipment be tested to determine the PCB concentration in their fluid. However, in the absence of a test, certain assumptions should be made about the equipment. For example, if the nameplate indicates that the equipment contains PCB dielectric fluid, or, if there is any reason to believe that the equipment at one time contained PCB dielectric fluid, or, if there is no nameplate on the equipment, then the equipment must be assumed to be PCB (500 ppm or greater). Electromagnets, switches, and voltage regulators which contain mineral oil dielectric fluid and whose PCB concentration is unknown, must be assumed to be PCB-Contaminated Electrical Equipment (50-499 ppm) and must be treated as such. These "assumption rules" effectively apply to all regulatory requirements relating to the equipment including: use and servicing, leaks and spills, sale for reuse, storage for disposal, and disposal.

Q7: Can screening tests, such as Clor-n-Oil™, be used to

determine the PCB concentration of an electromagnet, switch, or voltage regulator? If so, can "Certified Non-PCB" labels be used to classify electromagnets, switches, or voltage regulators based upon a screen test?

A7: Currently, the regulations do not require that any particular testing method be utilized when determining the PCB concentration in electromagnets, switches, or voltage regulators. However, owners of these types of equipment should prudently scrutinize PCB testing options, as there are significant differences in the integrity and accuracy of various testing methods. It should be noted that, in most situations, EPA will utilize laboratory gas-chromatography (GC) testing to determine PCB concentrations during facility inspections. EPA recommends that owners of electrical equipment choose testing methods, and practice sampling procedures, which are analytically accurate, reproducible, assure quality control, and are certifiable. EPA does not recognize the results of field screening test kits.

The use of non-PCB labels is unregulated by EPA. That is to say, there are no prohibitions or requirements to place non-PCB labels on electromagnets, switches, or voltage regulators. However, if non-PCB labels are used to indicate the classification of equipment, then owners should be able to provide documentation such as test results or manufacturer's letters along with historic service records which will substantiate the non-PCB classification. A criminal action could be persued for someone intentionally using non-PCB labels on known or assumed PCB Items.

Q8: Can I batch test oil samples from several electromagnets, switches, and/or voltage regulators and classify each unit based upon one test result?

A8: The only place in the regulations where "batch testing" is specifically allowed is under testing procedures for disposal of PCBs [761.60(g)]. However, batch testing to classify equipment for continued use of PCBs is also allowable provided that dilution does not take place. That is, mineral oil that is assumed or known to contain 50 ppm or greater PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the batch. It should also be noted that while batch testing is allowed, it does not relieve the owner from any regulatory requirements if an individual unit unknowingly contains a higher concentration of PCBs than was detected in the batch test.

Q9: Many mineral oil-filled voltage regulators and switches have no information on their nameplate indicating that they do, in fact, contain mineral oil dielectric fluid. Without this nameplate information, am I required to assume that these units are "PCB" classification (500 ppm or greater)?

A9: The regulations allow "oil-filled" electrical equipment whose PCB concentration is unknown to be assumed less than 500 ppm (PCB-contaminated, 50-499 ppm). EPA has received numerous comments from the electric utility industry and others indicating that significant numbers of mineral oil-filled voltage regulators and switches have no nameplate information about their dielectric fluid. In the absence of this information, one could interpret the regulations to require that these units be assumed "PCB" instead of "PCB-contaminated." However, almost all voltage regulators and switches are, in fact, mineral oil-filled and not designed to use PCB dielectric fluid. Consequently, it is reasonable to assume that voltage regulators and switches are "oil-filled" unless: (1) the nameplate indicates that the equipment contains PCB dielectric fluid, or (2) if there is any reason to believe that the equipment at one time contained PCB dielectric fluid.

STORAGE FOR REUSE

Voltage regulators and switches containing PCBs at any concentration may be stored for reuse. There are no time limitations on this storage; however, voltage regulators and/or switches (50 ppm or greater) which are stored for reuse must be in a condition suitable for reuse. These units are considered by EPA to be in-service for purposes of the regulations.

Electromagnets containing PCBs at any concentration may also be stored for reuse indefinitely provided that they are in a condition suitable for reuse; except that, the storage for reuse of a PCB electromagnet which poses an exposure risk to food or feed is prohibited after October 1, 1985.

Q10: How long can I keep a "burned-out" or "nonfunctional" electromagnet, switch, or voltage regulator in storage for reuse if I plan on repairing it and using it later?

A10: EPA does not require nonfunctional electromagnets, switches, or voltage regulators (regardless of PCB concentration) to be placed into "storage for disposal" if you intend to repair and reuse the item. However, EPA may have grounds to enforce against lengthy "storage for reuse" of equipment which is not reasonably expected to be placed back into service. In other words, while there are no explicit requirements for, or restrictions on, the storage for reuse of equipment which can be repaired, the owner should be able to demonstrate good faith compliance with the intent of the storage for disposal requirements and complete any required servicing or repairs within the same one year limitation associated with PCB disposal.

STORAGE FOR DISPOSAL

All PCB and PCB-contaminated electromagnets, switches, and voltage regulators must be dated when placed into storage for disposal [761.65(c)(8)] and must be removed from storage and disposed of within one year [761.65(a)].

The facility used to store PCB and PCB-contaminated electromagnets, switches, and/or voltage regulators must comply with the "storage for disposal" requirements [761.65 (b)(1)]. See the chapter on "PCB Storage Requirements" for specific requirements.

Nonleaking PCB and PCB-contaminated electromagnets, switches, and voltage regulators may be stored temporarily by a generator in an area that does not comply with the requirements for a PCB storage facility for up to 30 days from the date of their removal from service for disposal provided that a notation is attached to each unit indicating the dates the equipment was removed from service [761.65(c)(1)], and placed into storage for disposal [761.65(c)(8)].

Leaking PCB and PCB-contaminated electromagnets, switches, and voltage regulators which are placed in appropriate PCB Containers [761.65(c)(6)] with sufficient sorbent materials to absorb any liquid PCBs, may also be temporarily stored for up to 30 days provided that a notation is attached to the container indicating the dates the equipment was removed from service [761.65(c)(1)(ii)], and placed into storage for disposal [761.65(c)(8)]. Each container or drum used to store leaking PCB Items must be marked in accordance with EPA marking and labeling requirements [761.40 (a)(1)].

Nonleaking and structurally undamaged PCB-contaminated electromagnets, switches, and voltage regulators that have not been drained of free-flowing dielectric fluid may also be stored temporarily on pallets next to a PCB storage facility which meets the requirements for storage for disposal. This type of storage is permitted only when the storage facility has immediately available unfilled storage space equal to 10 percent of the volume of the equipment stored outside the facility. The equipment stored outside the facility must be inspected for leaks weekly [761.65(c)(2)], and a notation must be attached to each unit indicating the dates the equipment was removed from service [761.65(c)(1)] and placed into storage for disposal [761.65 (c)(8)].

DISPOSAL

PCB electromagnets, switches, and voltage regulators must be disposed of as follows:

- In an incinerator that complies with 40 CFR 761.70.

- In a chemical waste landfill provided that all free-flowing liquid PCBs have been thoroughly drained from the equipment. The PCB liquids that are removed (including any flushing solvent) must be disposed of in an incinerator that complies with 40 CFR 761.70, or by an alternative EPA approved and permitted method in accordance with 761.60(e).

PCB-contaminated electromagnets, switches, and voltage regulators must be disposed of as follows:

- By draining all free-flowing liquid from the equipment and disposing of the liquid in an incinerator that complies with 40 CFR 761.70, in a chemical waste landfill that complies with 761.75, in an approved high efficiency boiler that complies with 761.60(a)(2)(iii), or by an alternative EPA approved and permitted method that complies with 761.60(e). The disposal of the drained equipment carcass is not regulated [761.60 (b)(5)(ii)]. (See Distribution in Commerce.)

Non-PCB electromagnets, switches, and voltage regulators

(less than 50 ppm PCB) may be disposed of with the following considerations:

- There are no PCB disposal requirements for non-PCB electromagnets, switches, and voltage regulators. However, certain reuse restrictions apply to the less than 50 ppm PCB fluid. Waste oil with any detectable concentration of PCBs cannot be used as a sealant, coating, or dust control agent [761.20(d)]; and also, can only be burned for energy recovery in specific combustion facilities described in 761.20(e)(1). See the Chapter XIII on "PCB Disposal Requirements" for a detailed discussion of the disposal of non-PCB waste oils.

Q11: Do PCB electromagnets, switches, and voltage regulators have to be filled with a solvent for 18 hours and redrained before transporting the carcass to a chemical waste landfill?

All: No. Unlike PCB Transformers, there is no requirement to fill and flush PCB electromagnets, switches, or voltage regulators with solvent prior to disposal of the drained carcass in a chemical waste landfill. However, owners of PCB Equipment should take appropriate steps to insure that all free-flowing liquid PCBs have been extracted from the carcass.

RECORDKEEPING

Testing data, inventories, servicing and reclassification records, spill reports, and disposal records should be maintained for all PCB and PCB-contaminated electromagnets, switches, and voltage regulators. Under specific quantity guidelines, [761.180(a)] records are required to be kept to form the basis of an Annual Document Log and Annual Record which must be prepared each year and maintained for at least 3 years after the facility ceases using or storing PCBs and PCB Items. Disposers and commercial storers of all PCB and PCB-contaminated electromagnets, switches, and voltage regulators are required to keep records pursuant to 761.180(b). See Chapter XV, "Recordkeeping and Reporting" for a detailed discussion of other recordkeeping requirements.

SPILLS

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 a PCB or PCB-contaminated electromagnet, switch, or voltage regulator is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement for penalties or further cleanup. See the chapter on "PCB Spill Cleanup Policy" for specific measures.

PCB spills involving 1 lb. or more of PCBs (generally 1 pint of Askarel) must be reported to the National Response Center (NRC) at (800) 424-8802. Spills involving 10 lbs. or more of PCBs (generally 1 gallon of Askarel) must be reported to the appropriate Regional EPA office. Failure to notify the NRC under CERCLA can lead to penalties under Section 109 or, under Section 103, criminal fines and imprisonment. Any spill should be reported when people or animals can come into direct and uncontrolled contact with PCBs.

Measures must immediately be taken to control the spread of the spill. Any threats to water should be given highest priority. Water and other complicated spills should be cleaned up by trained personnel to levels set by the appropriate EPA Regional Administrator. Organizations that frequently handle PCBs should develop spill contingency plans and conduct training for dealing with spills.

Once a spill is contained, cleanup measures can begin. EPA requires cleanup of PCBs to different levels depending on spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. While the PCB Spill Cleanup Policy applies to the majority of situations, exceptional circumstances may require additional cleanup at the discretion of the EPA regional office. A detailed description of the specific reporting, cleanup, recordkeeping, and post-cleanup sampling requirements is found in the chapter on "PCB Spill Cleanup Policy."

Other minor weeping from PCB or PCB-contaminated equipment capacitor bushings and seams, not covered by the spill policy, is still considered improper disposal of PCBs and compels responsible parties to take actions to rectify the exposure of humans and the environment to PCBs.

Q12: Do records and/or spill reports have to be kept for all PCB

or PCB-contaminated electromagnets, switches, or voltage regulators which rupture?

A12: The PCB Spill Cleanup Policy specifies certain recordkeeping when a PCB or PCB-contaminated electromagnet, switch, or voltage regulator ruptures or spills. See the chapter on "PCB Spill Cleanup Policy" for specific spill recordkeeping.

CHAPTER VI

CIRCUIT BREAKERS
RECLOSERS AND CABLE

- CIRCUIT BREAKERS, RECLOSERS, AND CABLE -

Circuit breakers, reclosers, and cable are used primarily by electric utilities in the transmission and distribution of electric power to protect other equipment in the electric power system from damage caused by electrical faults. Circuit breakers, reclosers, and cable are types of oil-filled electrical equipment generally not designed to contain PCBs. However, available data indicate that a small percentage of this electrical equipment does in fact contain PCBs resulting from past servicing and manufacturing practices.

One very important difference between circuit breakers, reclosers, and cable is that they are not required to be "assumed" PCB-Contaminated Electrical Equipment as are other untested, oil-filled units such as transformers and voltage regulators whose PCB concentration is unknown. That is to say, circuit breakers, reclosers, and cable have specifically been excluded from the "Assumption Rule" [761.3]. It is important to note, however, that if circuit breakers, reclosers, or cable are 50 ppm or greater PCBs, then all regulatory requirements relating to the equipment including leaks and spills, storage for disposal, and disposal apply.

MANUFACTURING

The manufacture of PCBs, regardless of concentration, for use in circuit breakers, reclosers, and cable is prohibited without an EPA exemption [761.20(b)].

PROCESSING

The processing of PCBs, 50 ppm or greater, for use in circuit breakers, reclosers, or cable is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be processed for use in circuit breakers, reclosers, and cable (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be processed (i.e., prepared and/or packaged for distribution in commerce) for purposes of disposal [761.20(c)(2)].

DISTRIBUTION IN COMMERCE (Sale of Circuit Breakers, Reclosers, and Cable)

The distribution in commerce of PCBs, 50 ppm or greater, for use in circuit breakers, reclosers, and cable is prohibited without an EPA exemption [761.20(c)]. However, PCBs at concentrations less than 50 ppm may be distributed in commerce for use in circuit breakers, reclosers, and cable (under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3]. Also, PCBs at any concentration may be distributed in commerce for purpose of disposal [761.20(c)(2)]. Disposal, means the termination of the useful life of the PCB or PCB-contaminated circuit breaker, recloser, or cable.

The distribution in commerce (sale) of circuit breakers, reclosers, and cable which already contain PCBs in concentrations of 50 ppm or greater for purposes of reuse is allowed provided:

- the unit was originally sold for use before July 1, 1979;
- the unit is intact and nonleaking at the time of sale; and
- no PCBs are introduced into the unit.

Q1: Does this mean I can sell a PCB or PCB-contaminated circuit breaker, recloser, or cable?

A1: Yes. If the equipment was originally sold for use before July 1, 1979, and is now being sold for reuse (i.e., continued use). Also, the unit must be intact and nonleaking. EPA recommends that the buyer be advised that he is purchasing a PCB or PCB-contaminated unit.

Q2: What does intact and nonleaking mean?

A2: Intact and nonleaking means that the equipment is structurally sound with all fluid intact and there are no PCBs on the surface of the equipment.

Q3: Can I sell drained PCB-contaminated circuit breakers and/or recloser carcasses to a rebuilder for reuse as parts in repair and remanufacturing activities?

A3: No. Selling drained 50-499 ppm carcasses for reuse as parts

is an unauthorized distribution in commerce of PCBs and is prohibited without an EPA exemption. On the other hand, non-PCB carcasses (less than 50 ppm) can be sold for reuse

(under specific conditions) in accordance with the definition of "Excluded PCB Products" [761.3].

Q4: Can I sell drained PCB-contaminated circuit breakers and/or recloser carcasses to a scrap or salvage dealer for metals recovery?

A4: Yes. The sale of drained 50-499 ppm carcasses for scrapping or salvaging is generally considered distribution in commerce for purposes of disposal and is allowed with certain limitations. To qualify as disposal, the scrapping practice must be one which will "...terminate the useful life of PCBs or PCB Items" [761.3]; or, in other words, will destroy any residual PCBs found in the drained carcasses. Salvaging aimed at reclamation of the metals found in the case and coil generally constitutes disposal, because any residual PCBs are destroyed by the high temperatures employed in the smelting process. However, where salvaging consists of disassembling the drained equipment to obtain parts for reuse in other equipment, the useful life of the equipment has not been fully terminated and thus is not considered disposal. In sum, the scrapping/salvaging of 50-499 ppm drained equipment is unregulated to the extent that: (1) scrapping practices do not result in leaks, spills, or other uncontrolled discharges of PCBs, and (2) any PCB-contaminated components are not reintroduced into commerce.

EXEMPTIONS TO MANUFACTURE, PROCESS, AND DISTRIBUTE PCBs IN COMMERCE

Exemptions to manufacture, process, and distribute in commerce PCBs in circuit breakers, reclosers, and cable may be granted only by rulemaking on a case-by-case basis. The EPA Administrator may set terms and conditions for an exemption and may grant an exemption for not more than one year. EPA interim procedural rules for processing and distribution in commerce exemptions describe the required content of processing and distribution in commerce exemptions petitions and the procedures EPA follows in rulemaking on exemption petitions. Those rules were published in the Federal Register of May 31, 1979 (44 FR 31558) and are codified at 40 CFR 750.30 through 750.41.

MARKING/LABELING

Marking/labeling of circuit breakers, reclosers, and cable, regardless of PCB concentration, is not required.

USE CONDITIONS

PCB and PCB-contaminated circuit breakers, reclosers, and cable may be used for the remainder of their useful lives. No recorded maintenance inspections are required for PCB or PCB-contaminated circuit breakers, reclosers, or cable. However, ruptures, leaks, and other uncontrolled discharges from PCB or PCB-contaminated circuit breakers, reclosers, and cable are considered improper disposal of PCBs.

SERVICING AND RECLASSIFICATION CONDITIONS

Processing of PCB and PCB-contaminated circuit breakers, reclosers, and cable is limited to servicing activities. These servicing activities include: draining and refilling, topping off, repairing, and retrofilling for reclassification [761.30(m)(1)]. Circuit breakers, reclosers, and cable may be serviced (including rebuilding) only with dielectric fluid containing less than 50 ppm PCB.

A PCB circuit breaker or recloser may be reclassified to a PCB-contaminated or non-PCB unit by draining, refilling, and otherwise servicing the unit. In order to reclassify, the unit's dielectric fluid must contain less than 500 ppm PCB (for conversion to PCB-contaminated level) or less than 50 ppm PCB (for conversion to non-PCB level) after a minimum of 3 months of in-service use subsequent to the last servicing conducted for the purposes of reducing the PCB concentration in the unit. In-service means that the unit is used electrically under loaded conditions [761.30(m)(1)].

The following conditions also apply to service activities:

- Removing the coil from PCB circuit breakers or reclosers (500 ppm or greater) is prohibited [761.30(m)(1)].

- PCBs from PCB circuit breakers, reclosers, and cable must not be mixed with or added to dielectric fluid from PCB-contaminated circuit

breakers, reclosers, and cable [761.30(m)(1)].

- If dielectric fluid containing less than 500 ppm PCBs is mixed with fluid containing 500 ppm or greater PCBs, then the resulting mixture must not be used as dielectric fluid in any electrical equipment. The entire mixture must be considered to be greater than 500 ppm PCBs and must be disposed of in an incinerator that meets EPA requirements [761.30(m)(1)], or by an alternative EPA approved and permitted method.

- Mineral oil from circuit breakers, reclosers, and cable must not be mixed with mineral oil from other electrical equipment, such as transformers and voltage regulators, whose PCB concentration is unknown. If dielectric fluid from untested, oil-filled circuit breakers, reclosers, or cable is collected in a common container with dielectric fluid from other oil-filled electrical equipment, the entire contents of the container must be treated as PCBs at a concentration of at least 50 ppm, unless all of the fluid from the other oil-filled electrical equipment has been tested and shown to contain less than 50 ppm PCBs [761.60(g)(1)(i)].

Q5: Our facility periodically drains oil-filled circuit breakers, reclosers, and cable, brought in for servicing, into drums and/or bulk tanks. From time to time, an untested transformer or voltage regulator is also brought in for servicing and the oil from these units is drained into the same drums and/or storage tanks. These drums/tanks are always batch tested for PCBs and the contents are then reused in servicing oil-filled circuit breakers, reclosers, and cable, or disposed of based upon the PCB test result. Is there anything wrong with this type of mixing and batch testing?

A5: Yes. What you have in this scenario is unauthorized "dilution" of PCBs. The regulations do allow mixing and batch testing under certain conditions. However, the mixing of untested oil from circuit breakers, reclosure, and cable with untested transformer and regulator oil for batch testing is prohibited. If these dielectric fluids are collected in a common container, then the entire mixture must be treated as 50 ppm or greater PCBs even if a batch test resulted in less than 50 ppm. Consequently, the

mixture could not be reused in servicing oil-filled circuit breakers, reclosers, and cable, and the entire mixture must be stored for disposal and disposed of as containing PCBs at a concentration of 50 ppm or greater.

Q6: Is a circuit breaker or recloser required to reach 50° Centigrade during the 90-day in-service period for proper reclassification?

A6: No. Unlike transformers, there is no 50° Centigrade requirement for reclassification of these types of equipment [761.30(m)(1)].

Q7: Can screening tests, such as Clor-n-Oil™, be used to determine the PCB concentration of circuit breakers, reclosers, or cable? If so, can "certified non-PCB" labels be used to classify these units based upon a screen test?

A7: Currently, the regulations do not require that any particular testing method be utilized when determining the PCB concentration in circuit breakers, reclosers, or cable. However, owners of these types of equipment should prudently scrutinize PCB testing options, as there are significant differences in the integrity and accuracy of various testing methods. It should be noted that, in most situations, EPA will utilize laboratory gas-chromatography (GC) testing to determine PCB concentrations during facility inspections. EPA recommends that owners of electrical equipment choose testing methods, and practice sampling procedures, which are analytically accurate, reproducible, assure quality control, and are certifiable. EPA does not recognize results of field screening test kits for classifying PCB equipment.

The use of non-PCB labels is unregulated by EPA. That is to say, there are no prohibitions or requirements to place non-PCB labels on circuit breakers, reclosers, or cable. However, if non-PCB labels are used to indicate the classification of equipment, then owners should be able to provide documentation such as test results or manufacturer's letters along with historic service records which will substantiate the non-PCB classification. Criminal action could be pursued for someone intentionally using non-PCB labels on PCB or PCB-contaminated items.

Q8: Can I batch test oil samples from several circuit breakers or reclosers and classify each unit based upon one test result?

A8: The only place in the regulations where "batch testing" is specifically allowed is under testing procedures for disposal of PCBs [761.60(g)]. However, batch testing to classify equipment for continued use of PCBs is also allowable provided that dilution does not take place. That is, mineral oil that is assumed or known to contain 50 ppm or greater PCBs must not be mixed with mineral oil that is known or assumed to contain less than 50 ppm PCBs to reduce the concentration of PCBs in the batch. It should also be noted that while batch testing is allowed, it does not relieve the owner from any regulatory requirements if an individual unit is discovered to contain a higher concentration of PCBs than was detected in the batch test.

STORAGE FOR REUSE

Circuit breakers, reclosers, and cable containing PCBs at any concentration may be stored for reuse. There are no time limitations on this storage; however, circuit breakers, reclosers, and cable (50 ppm or greater) which are stored for reuse must be in condition suitable for reuse. These units are considered by EPA to be in-service for purposes of the regulations.

Q9: How long can I keep a "burned-out" or "nonfunctional" PCB or PCB-contaminated circuit breaker or recloser in storage for reuse if I plan on repairing it and using it later?

A9: It is not required that nonfunctional equipment be placed into "storage for disposal" if there is a possibility of repair. However, EPA may have grounds to enforce against lengthy "storage for reuse" of equipment which is not reasonably expected to be placed back into service. In other words, while there are no explicit requirements for, or restrictions on, the storage for reuse of equipment which can and may be repaired, the owner should be able to demonstrate good faith compliance with the intent of the storage for disposal requirements and complete any required servicing and/or repairs within a reasonable timeframe.

STORAGE FOR DISPOSAL

All PCBs and PCB-contaminated circuit breakers, reclosers, and cable must be dated when placed into storage for disposal [761.65(c)(8)] and must be removed from storage and disposed of within one year [761.65(a)].

The facility used to store PCB and PCB-contaminated circuit breakers, reclosers, and/or cable must comply with the "storage for disposal" requirements [761.65(b)(1)]. See the chapter on "PCB Storage Facilities" for specific requirements.

Nonleaking PCB and PCB-contaminated circuit breakers, reclosers, and cable may be stored temporarily by a generator in an area that does not comply with the requirements for a PCB storage facility for up to 30 days from the date of their removal from service for disposal provided that a notation is attached to each unit indicating the dates the equipment was removed from service [761.65(c)(1)(i)], and placed into storage for disposal [761.65(c)(8)].

Leaking PCB and PCB-contaminated circuit breakers, reclosers, and cable which are placed in appropriate PCB Containers [761.65(c)(6)] with sufficient sorbent materials to absorb any liquid PCBs, may also be temporarily stored by a generator for up to 30 days provided that a notation is attached to the container indicating the dates the equipment was removed from service [761.65(c)(1)], and placed into storage for disposal [761.65(c)(8)]. Each container or drum used to store leaking PCB Items must be marked in accordance with EPA marking and labeling requirements [761.40(a)(1)]. Nonleaking and structurally undamaged PCB-contaminated circuit breakers, reclosers, and cable that have not been drained of free-flowing dielectric fluid may be stored temporarily on pallets next to a PCB storage facility which meets the requirements for storage for disposal. This type of storage is permitted only when the storage facility has immediately available unfilled storage space equal to 10 percent of the volume of the equipment stored outside the facility. The equipment stored outside the facility must be inspected for leaks weekly [761.65(c)(2)], and a notation must be attached to each unit indicating the dates the equipment was removed from service [761.65(c)(1)] and placed into storage for disposal [761.65 (c)(8)]. If a weekly visual inspection reveals a piece of equipment is leaking, having the required available space within the storage area allows immediate containment of the leak by moving the

equipment into the storage area.

DISPOSAL

PCB circuit breakers, reclosers, and cable must be disposed of as follows:

- In an incinerator that complies with 40 CFR 761.70.

- In a chemical waste landfill provided that all free-flowing liquid PCBs have been thoroughly drained from the equipment. The PCB liquids that are removed (including any flushing solvent) must be disposed of in an incinerator that complies with 40 CFR 761.70, or by an alternative EPA approved and permitted method in accordance with 761.60(e).

PCB-contaminated circuit breakers, reclosers, and cable must be disposed of as follows:

- By draining all free-flowing liquid from the equipment and disposing of the liquid in an incinerator that complies with 40 CFR 761.70, in a chemical waste landfill that complies with 761.75, in an approved high efficiency boiler that complies with 761.60(a)(2)(iii), or by an alternative EPA approved and permitted method that complies with 761.60(e). The disposal of the drained equipment carcass is not regulated [761.60 (b)(5)(ii)]; however, the sale or trade of the drained carcass for reuse as parts or in rebuilding is regulated. (See Distribution in Commerce.)

Non-PCB circuit breakers, reclosers, and cable (less than 50 ppm PCB) may be disposed of with the following considerations:

- There are no PCB disposal requirements for non-PCB circuit breakers, reclosers, and cable. However, certain reuse restrictions apply to the less than 50 ppm PCB fluid. Waste oil with any detectable concentration of PCBs cannot be used as a sealant, coating, or dust control agent [761.20(d)]; and also, can only be burned for energy recovery in

specific combustion facilities described in 761.20(e)(1). See the chapter on "PCB Disposal Requirements" for a detailed discussion of the disposal of non-PCB waste oils.

Q10: Do PCB circuit breakers, reclosers, and cable have to be filled with a solvent for 18 hours and redrained before transporting the carcass to a chemical waste landfill?

A10: No. Unlike PCB Transformers, there is no requirement to fill and flush PCB circuit breakers, reclosers, and cable with solvent prior to disposal of the drained carcass in a chemical waste landfill. However, owners of PCB Equipment should take appropriate steps to insure that all free-flowing liquid PCBs have been extracted from the carcass.

RECORDKEEPING

Testing data, inventories, servicing and reclassification records, spill reports, and disposal records should be maintained for all PCB and PCB-contaminated circuit breakers, reclosers, and cable. Under specific quantity guidelines, [761.180(a)] records are required to be kept to form the basis of an Annual Document Log and Annual Record which must be prepared each year and maintained for at least 3 years after the facility ceases using or storing PCBs and PCB Items. See Chapter XV, "Recordkeeping and Reporting" for a detailed discussion of other recordkeeping requirements.

SPILLS

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 a PCB or PCB-contaminated circuit breaker, recloser, or cable is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement for penalties or further cleanup. See the chapter on "PCB Spill Cleanup Policy" for specific measures.

PCB spills involving 1 lb. or more of PCBs (generally 1 pint of Askarel) must be reported to the National Response Center (NRC) at (800)424-8802. Spills involving 10 lbs. or more of

PCBs must be reported to the appropriate regional EPA office. Failure to notify the NRC under CERCLA can lead to civil penalties under Section 109 or, under Section 103, criminal fines and imprisonment. Any spill should be reported when people or animals can come into direct and uncontrolled contact with PCBs.

Measures must immediately be taken to control the spread of the spill. Any threats to water should be given highest priority. Water and other complicated spills should be cleaned up by trained personnel to levels set by the appropriate EPA Regional Administrator. Organizations that frequently handle PCBs should develop spill contingency plans and conduct training for dealing with spills.

Once a spill is contained, cleanup measures can begin. EPA requires cleanup of PCBs to different levels depending on spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. While the PCB Spill Cleanup Policy applies to the majority of situations, exceptional circumstances may require additional cleanup at the discretion of the EPA regional office. A detailed description of the specific reporting, cleanup, recordkeeping, and postcleanup sampling requirements is found in the chapter on "PCB Spill Cleanup Policy."

Other minor weeping from PCB or PCB-contaminated equipment bushings and seams not covered by the spill policy is still considered improper disposal of PCBs and compels responsible parties to take actions to rectify the exposure of humans and the environment to PCBs.

Q11: Do records and/or spill reports have to be kept for all PCB or PCB-contaminated circuit breakers, reclosers, or cable which rupture and/or spill?

A11: The PCB Spill Cleanup Policy specifies specific recordkeeping when a PCB or PCB-contaminated circuit breaker, recloser, or cable ruptures or spills. See the chapter on "PCB Spill Cleanup Policy" for specific spill recordkeeping.

CHAPTER VII

RESEARCH AND DEVELOPMENT

-RESEARCH AND DEVELOPMENT-

PCBs are used in toxicological and environmental testing. They are also used in analytical chemistry as "reference standards" for the analysis of unknown compounds that may contain PCBs.

EPA determined that there are no substitutes for PCBs for the continuation of important health, environmental, and analytical research and that substitutes for PCBs in these applications will not be developed in the future. Therefore, there is a unique need for exemptions to manufacture, process, distribute in commerce, and export PCBs in small quantities for research and development.

MANUFACTURING

The manufacture of PCBs for the purpose of research and development is prohibited without an EPA exemption [761.20(b)]. (Note: EPA has granted exemptions to manufacture PCBs in small quantities for research and development.)

PROCESSING

The processing of PCBs for the purpose of research and development is prohibited without an EPA exemption [761.20(c)]. (Note: EPA has granted exemptions to process PCBs in small quantities for research and development.)

DISTRIBUTION IN COMMERCE

The distribution in commerce of PCBs for the purpose of research and development is prohibited without an EPA exemption [761.20(c)]. (Note: EPA has granted exemptions to distribute in commerce PCBs in small quantities for research and development.)

EXPORTING

The export of PCBs for the purpose of research and development is prohibited without an EPA exemption [761.20(b)&(c)]. (Note: EPA has granted exemptions to

export PCBs in small quantities for research and development.)

EXEMPTIONS TO MANUFACTURE, PROCESS, DISTRIBUTE IN COMMERCE, AND EXPORT PCBs

Section 6(e)(3)(B) of TSCA provides that any person may petition the Administrator for an exemption from the prohibition against the manufacture, processing, and distribution in commerce of PCBs. The Administrator may by rule grant an exemption if the Administrator finds that "(i) an unreasonable risk to health or the environment would not result, and (ii) good faith efforts have been made to develop a chemical substance which does not present an unreasonable risk of injury to health or the environment and which may be substituted for such polychlorinated biphenyl." The Administrator may set terms and conditions for an exemption and may grant an exemption for not more than one year.

EPA's Interim Procedural Rules for Processing and Distribution in Commerce Exemptions describe the required content of processing and distribution in commerce exemption petitions and the procedures EPA follows in rulemaking on exemption petitions. Those rules were published in the Federal Register of May 31, 1979 (44 FR 31514) and are codified at 40 CFR 750.30 through 750.41.

The class exemption on processing and distribution in commerce includes all persons or business entities which process and distribute in commerce PCBs in accordance with the definition of "small quantities for research and development" [761.30(j)]. EPA also places the following terms and conditions on the class exemption:

- All processors and distributors must maintain records of their PCB activities for a period of 5 years.
- Any person or company that expects to process or distribute in commerce 100 grams (.22 lb.) or more PCBs for research and development in 1 year must report to EPA and identify the sites of PCB activities and the quantity of PCBs to be processed and distributed in commerce.

USE CONDITIONS

PCBs may be used in small quantities for the purpose of research and development indefinitely provided the use is in accordance with the following definition:

- "Small Quantities for Research and Development" means any quantity of PCBs (1) that is originally packaged in one or more hermetically sealed containers of a volume of no more than five (5.0) milliliters, and (2) that 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.

As published in the Federal Register on March 30, 1983 (48 FR 13184), research and development on disposal methods using PCBs constitutes disposal and is regulated using the disposal section of the PCB regulations (40 CFR 761.60). Failure to obtain prior approval from EPA to conduct disposal research and development is a violation of the PCB disposal regulations.

Q1: I have just received a package of PCBs for research and development purposes. How should I store the hermetically sealed containers until use?

A1: There are no storage requirements for hermetically sealed packages of PCBs that will be used for research and development. As long as the hermetically sealed containers have not been opened, they may be stored for future use indefinitely. However, once the seal has been broken on a container, the small quantity of PCBs must be used for their intended purpose in a timely fashion. Any residual PCB wastes, including contaminated containers and lab instruments, must be stored for disposal in accordance with EPA requirements.

Q2: Is there a limit on the number of hermetically sealed 5 milliliter containers that can be used?

A2: No, one may use as many as necessary to conduct the research and development activity.

MARKING/LABELING

All hermetically sealed containers containing small quantities of PCBs for research and development must be marked/labeled in accordance with EPA marking requirements for PCB Containers [761.40(a)(1)].

In addition, if sealed containers are stored in a package, then the package must be marked/labeled in accordance with EPA marking requirements for PCB Article Containers [761.40(a)(9)].

STORAGE FOR DISPOSAL

Any PCB waste generated from the use of small quantities of PCBs for research and development (i.e., contaminated containers and lab instruments) must be stored for disposal in a facility which complies with EPA storage for disposal requirements [761.65(b)(1)].

However, PCB waste from research and development can also be stored temporarily by the generator for up to 30 days in an area that does not comply with the requirements for a PCB storage facility provided that the following conditions are met:

- PCB waste must be placed in an appropriate PCB Container/drum [761.65(c)(6)] with sufficient sorbent materials to absorb any liquid PCBs.
- The PCB Container/drum must be marked/labeled in accordance with EPA marking requirements [761.40(a)(1)].
- A notation must be attached to the PCB Container/drum indicating the date the first PCB waste was placed into the container/drum for disposal [761.65(c)(1)].
- Within 30 days, all PCB waste within the container/drum must either be transferred to a storage facility which meets the requirements for storage for disposal [761.65(b)(1)], or to an EPA approved and permitted PCB disposal facility.

Q3: From time to time, our lab wishes to return PCB analytical standards to our supplier because of overshipment and/or the delivery of incorrect standards. Can these standards be

returned and used by another company or must unused standards be disposed of as PCB waste?

A3: The class exemption to process and distribute in commerce small quantities of PCBs for research and development would also apply in this situation and allow the return of standards to suppliers for processing and use by another company. The standards must be packaged in hermetically sealed containers of a volume of no more than 5 milliliters.

DISPOSAL

PCB wastes (50 ppm or greater) generated from research and development activities such as used PCB standards, contaminated containers, and contaminated lab instruments must be disposed of in accordance with EPA disposal requirements under 761.60. Debris from a spill may be disposed of in a 761.60 incinerator or a 761.75 chemical waste landfill [761.60(a)(4)].

RECORDKEEPING AND REPORTING REQUIREMENTS

The class exemption to process and distribute in commerce small quantities of PCBs for research and development includes the following recordkeeping/reporting requirements:

- All processors and distributors must maintain records of their PCB activities for a period of 5 years.
- Any person or company that expects to process or distribute in commerce 100 grams (.22 lb.) or more PCBs for research and development in 1 year must report to EPA and identify the sites of PCB activities and the quantity of PCBs to be processed and distributed in commerce.

SPILLS

Spills, leaks, and other uncontrolled discharges resulting in the release of any quantity of PCBs (50 ppm or greater) is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement for penalties or further cleanup. See the

chapter on "PCB Spill Cleanup Policy" for specific measures.

CHAPTER VIII

MICROSCOPIC
MOUNTING MEDIUM
IMMERSION OILS
OPTICAL LIQUIDS

-MICROSCOPIC MOUNTING MEDIUM, IMMERSION OILS, OPTICAL LIQUIDS-

PCBs are reported to be an ideal mounting medium for light microscopy primarily because of their stability, refractive index, viscosity, and thermoplastic properties. In the past, the principal users have been mineralogists and chemical microscopists employed in chemical laboratories such as: police crime-laboratories, museum conservation laboratories, industrial laboratories, where contaminant particles in drugs, food, and plastics are identified, and in laboratories studying environmental contaminants. PCBs are used in art and historic conservation as a mounting medium to preserve specimens permanently and in the preservation of small environmental, forensic, and industrial contaminant particles.

Although mounting media exist with refractive indices and viscosities similar to PCBs, these media reportedly discolor in time. At this time, there are no adequate substitutes for PCBs in the preparation of permanent slides.

PCBs are useful as microscope immersion oils in medical research. Small amounts of PCB immersion oils are useful in cancer studies in which fluorescence microscopy is used. The technique used in immersion microscopy involves placing a drop of immersion oil on the coverslip of the slide and lowering the objective lens of the microscope until it just touches the oil.

PCB immersion oil has the lowest fluorescence of any currently available formulation, and this property is particularly important in fluorescence microscopy where the immersion oil must not fluoresce and therefore will not compete with the fluorescence of the specimen under analysis. There appears to be no other suitable alternate material with the desirable low auto-fluorescence, low dispersion, and high refractive index of PCBs.

Scientists in the fields of space, communications, and defense-related research use .02 cc to 4 liters of PCBs in certain specialized optical applications including use in fiber optic connectors. These PCBs are contained in optical equipment where they exist in a permanent or semi-permanent state.

It is believed there are no adequate substitutes for PCBs as optical liquids in space, communications, defense-related

research projects, and other specialized optical uses, such as the use of PCBs in tunable light receivers. There are relatively few compounds with as high a refractive index as PCBs and none that also has the long-term stability. An example of an optical use of PCBs, where their use is essential, is the use of PCBs with tunable light receivers for the analysis of light from a solar telescope. PCBs are necessary in these light receivers because of their stability and ability to transmit light better in the blue and green regions of the spectrum, where starlight is transmitted, than other potential substitute fluids.

MANUFACTURING, PROCESSING, AND DISTRIBUTION IN COMMERCE

The manufacture, processing, and distribution in commerce of PCBs for use as a mounting medium, immersion oil in fluorescence microscopy, and optical liquid are permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B).

USE CONDITIONS

PCBs may be used as a permanent microscopic mounting medium, an immersion oil in fluorescence microscopy, and an optical liquid in a manner other than a totally enclosed manner indefinitely [761.30(k), (n), (o)].

DISPOSAL

All PCB waste resulting from the use of PCBs in concentrations 50 ppm or greater as a mounting medium, immersion oil, and/or optical liquid must be disposed of in accordance with EPA disposal requirements [761.60].

SPILLS

Spills, leaks, and other uncontrolled discharges resulting in the release of any quantity of PCBs (50 ppm or greater) is considered improper disposal of PCBs. The PCB Spill Cleanup Policy provides specific cleanup measures which, if followed explicitly, create a presumption against enforcement for penalties or further cleanup. See the chapter on "PCB Spill Cleanup Policy" for specific measures.

CHAPTER IX

CARBONLESS COPY PAPER

-CARBONLESS COPY PAPER-

OVERVIEW

Prior to 1971, some carbonless copy paper was made with ink containing PCBs. There does not appear to be a way to distinguish PCB carbonless copy paper from non-PCB carbonless copy paper except by dates or other indications on unused inventories. A large portion of the PCB copy paper that has not been destroyed is probably in files. An enormous undertaking would be required of both business and government to purge existing files of PCB carbonless copy paper. As the amount of PCB on each sheet of paper is extremely small, EPA has concluded that the continued use of carbonless copy paper does not present an "unreasonable risk" and has authorized the continued use of existing PCB copy paper.

MANUFACTURING

The manufacture of PCBs for use in carbonless copy paper is prohibited without an EPA exemption [761.20(b)].

PROCESSING

The processing of PCBs for use in carbonless copy paper is prohibited without an EPA exemption [761.20(c)].

DISTRIBUTION IN COMMERCE

The distribution in commerce of PCBs for use in carbonless copy paper is prohibited without an EPA exemption [761.20(c)].

CHAPTER X

EXCLUDED PCB PRODUCTS

-EXCLUDED PCB PRODUCTS-

In the Federal Register of July 10, 1984 (49 FR 28172), EPA published the "Uncontrolled PCBs" rule. This final rule was a result of the "EDF v. EPA" lawsuit in which the Environmental Defense Fund (EDF) challenged EPA's general 50 parts per million (ppm) regulatory cutoff for PCBs. This challenge was successful and on October 30, 1980, the U.S. District Court of Appeals found that there was not substantial evidence to support EPA's original decision to exclude generally from regulation all materials containing PCBs at concentrations less than 50 ppm. Consequently, EPA undertook the regulation of very low concentration PCBs (less than 50 ppm).

The 1984 "Uncontrolled PCBs" rule among other things, regulated manufacturing processes generating low concentration PCBs in other than "closed" and "controlled waste" processes. On the date the rule became effective, the Court lifted its stay in the EDF lawsuit, which had the effect of banning any activity involving any quantifiable level of PCBs unless that activity was specifically excluded, exempted, or authorized by regulation. The practical effect of the Court's action was to make illegal many activities which were neither anticipated nor evaluated during the rule's development and which presented no unreasonable risk to health or the environment.

Consequently, on June 27, 1988 (53 FR 24206), EPA published in the Federal Register a set of amendments to the 1984 PCB "Uncontrolled Rule." These amendments have excluded the majority of low-level PCB activities (less than 50 ppm) from regulation. In other words, many low-level PCB activities which became prohibited with the "Uncontrolled PCBs" rule have returned to unregulated status.

The amendments to the 1984 rule include a generic exclusion for products containing less than 50 ppm PCBs using the new term "Excluded PCB Products" (761.3). Generally, the processing, distribution in commerce, and use of "Excluded PCB Products" is now unregulated. "Excluded PCB Products" are defined as PCBs which appear at concentrations less than 50 ppm in products including, but not limited to, inadvertently generated PCBs (see 761.1(f)), PCB contaminated products (e.g., investment casting waxes), PCB contaminated recycled fluids and equipment, and used oils, provided that:

- The products were legally manufactured, processed, distributed in commerce, or used before October 1, 1984.

- The products were legally manufactured, processed, distributed in commerce, or used pursuant to authority granted by EPA by regulation, by exemption, by settlement agreement, or pursuant to other agency-approved programs.

- The resulting PCB concentration (< 50 ppm) is not a result of any dilution.

NOTE: This rule does not affect land application practices involving sewage sludge or other nonhazardous solid wastes which contain PCBs at concentrations less than 50 ppm. These activities are regulated under other EPA programs.

EPA adopted the generic exclusion for "Excluded PCB Products" based upon the Agency's determination that the use, processing, and distribution in commerce of these products with less than 50 ppm PCB contamination will not generally present an unreasonable risk to health or the environment. However, EPA is aware that some product uses and processing, particularly the burning and recycling of used oil, may present unique exposure and risk considera-tions.

USED OIL - History

Under the PCB "Uncontrolled Rule," there was considerable confusion regarding the status of used oil containing less than 50 ppm PCBs. In the earlier 1979 "PCB Ban Rule", used non-PCB oil (less than 50 ppm) was unregulated except for its reuse as a dust suppressant, sealant, or coating which was prohibited at any detectable PCB level. However, with the overturning of the general 50 ppm regulatory cutoff by the EDF v. EPA decision, activities (use, processing, or distribution in commerce) involving less than 50 ppm PCBs became prohibited on October 1, 1984, unless specifically authorized, exempted, or excluded by regulation. Prior to publication of the PCB "Uncontrolled Rule" amendments, EPA had specifically authorized only three reuses of oil products with less than 50 ppm PCBs:

- The reuse of dielectric fluids (as dielectrics).

- The reuse of hydraulic and heat transfer fluids (as hydraulic and heat transfer fluids).

- The reuse of waste oil as a feedstock by manufacturers of asphalt roofing materials under the conditions set out in the definition of "Recycled PCBs" processes.

Therefore, other activities involving the use, processing, or distribution in commerce of used oil with any quantifiable PCB concentration (2 ppm or greater) became prohibited.

USED OIL - Current

The processing, distribution in commerce, and use of low-level used oils (2-49 ppm) is generally excluded from regulation under the definition of "Excluded PCB Products." This exclusion does not, however, affect the existing prohibitions on the use of waste oil containing any detectable level of PCBs as a dust suppressant, sealant, or coating. It is important to note that low-level used oil activities consisting solely of "disposal" are not prohibited. This "unregulated disposal" status does not mean that EPA has authorized the indiscriminate dumping or burning of used oil containing less than 50 ppm PCBs. It should be stressed that the PCB regulations define "Disposal" in terms of acts which "complete or terminate the useful life of PCBs." In this context, the Agency considers that used oil activities such as recycling for use and/or burning in a manner that does not destroy or "terminate the useful life of PCBs" in fact constitutes reuse or processing of PCBs and consequently became prohibited under the PCB "Uncontrolled Rule." Used oil (2-49 ppm) could be burned for energy recovery, but only in combustion units which accomplish PCB destruction. Burning PCBs, even at low-level concentrations, in combustion units which do not accomplish PCB destruction may volatilize the PCBs and potentially create an additional point source of toxic products such as polychlorinated dibenzofurans (PCDFs). The burning of used oil (2-49 ppm) is allowed only if the following marketing, burning, testing, and recordkeeping requirements are met:

1) MARKETING: Owners and operators of facilities which process and/or distribute in commerce for energy recovery used oil containing any detectable level of PCBs are referred to as "Marketers" of used oil fuels. Used oil

containing any detectable level of PCBs may be marketed only to:

- qualified incinerators defined in 40 CFR 761.3,
- other marketers identified in 40 CFR 279, or
- burners identified under 40 CFR 761.20(e)(1)(iii).

2) BURNING: Owners and operators of facilities which burn used oil containing any detectable level of PCBs are referred to as "Burners" of used oil fuels. Used oil containing any detectable level of PCBs may be burned for energy recovery only in:

- an incinerator approved under the provisions of 761.70, or
- a high efficiency boiler which complies with the criteria of 761.60(a)(2)(iii)(A), and for which the operator (burner) has given written notice to the EPA Regional Administrator in accordance with the requirements under 761.60(a)(2)(iii)(B), or
- an incinerator approved under Section 3005(c) of RCRA, or
- burners identified in 40 CFR 279.61(a)(1) and (2).

In addition, before a burner accepts from a marketer the first shipment of used oil fuel containing detectable PCBs (2-49 ppm), he must provide the marketer a one-time written and signed notice certifying that:

- he has complied with any notification requirements applicable to "Qualified Incinerators" (761.3) or to "Burners" regulated under 40 CFR Part 279; and
- he will burn the used oil only in a combustion facility identified in 761.20(e)(1).

3) TESTING: Used oil to be burned for energy recovery is presumed to contain detectable levels of PCBs unless the marketer obtains analysis (testing) or other information documenting that the used oil fuel does not contain detectable levels of PCBs.

- The person who first claims that a used oil fuel

does not contain detectable PCBs is subject to the requirement to obtain analysis or other information to support this claim.

- Testing to determine the PCB concentration in used oil may be conducted on individual samples, or in accordance with the batch testing procedures described in 761.60(g)(2).

- Other information documenting that used oil fuel does not contain detectable levels of PCBs may consist of either personal, special knowledge of the source and composition of the used oil, or a certification from the person generating the used oil claiming that the oil contains no detectable PCBs (i.e., <2 ppm).

4) RECORDKEEPING: The following recordkeeping requirements apply to the testing, marketing, and burning of used oil fuels.

- The marketer who first claims that used oil fuel contains no detectable PCBs must include copies of the analysis or other information documenting his claim among the records required to be kept under 40 CFR 279.72 and 279.74.

- Burners must include a copy of each 761.20(e)(3)(ii) certification notice that he sends to a marketer among the records required to be kept under 40 CFR 279.65 and 279.66.

- A marketer must include a copy of each certification notice relating to transactions involving PCB-containing used oil among the records required to be kept under 40 CFR 279.74 and 279.75.

Q1: My facility regularly accumulates used oil containing low-level PCBs. What options do I have for getting rid of these waste oils?

A1: Some of the options available for waste oils containing low-level PCB contamination (less than 50 ppm) include but are not limited to:

1) Disposal in a "Qualified Incinerator" (761.3).
2) Disposal by an alternative EPA approved and permitted

method such as "chemical detoxification."

3) Servicing and/or reuse in electrical equipment as a dielectric fluid (if originally a dielectric fluid).

4) Servicing and/or reuse in heat transfer and hydraulic systems (if originally heat transfer and hydraulic fluid).

Q2: From time to time our facility sells and/or gives away waste oils we've accumulated to other parties. It is unknown whether these waste oils contain any PCBs or exactly what these waste oils are used for. Our facility isn't responsible for how these waste oils are used or burned...are we?

A2: First, the waste oils your facility is selling/giving away must be presumed to contain detectable levels of PCBs unless the oil is tested or otherwise certified not to contain detectable PCBs. Also, if the waste oils being sold or given to other parties are being used in prohibited activities, your facility is possibly involved in improper distribution in commerce (marketing) of PCBs. The marketing of low-level PCB waste oils is a regulated activity and imposes specific recordkeeping and certification requirements of the marketer.

Q3: Can a facility burn its own non-PCB (2-49 ppm) waste oils?

A3: Yes, provided the facility uses a high efficiency boiler or other combustion system that complies with the definition of "Qualified Incinerators" (761.3). If it is unclear whether a boiler or incinerator meets the requirements, the facility should contact their Regional EPA Office and provide information on their system which EPA will evaluate on a case-by-case basis.

INVESTMENT CASTING WAXES

EPA examined the facts surrounding past uses of PCBs as a wax extender, as well as the circumstances of residual low levels of PCB contamination in the stocks of reclaimed waxes. EPA determined that the further use, processing, and distribution in commerce of these waxes will not present an unreasonable risk to health or the environment. In the 1988 amendments to the PCB "Uncontrolled Rule," investment casting waxes were included among the class of "Excluded PCB Products." Activities involving these waxes are now generally excluded from TSCA regulation provided they

contain less than 50 ppm PCBs [761.3].

ELECTRICAL EQUIPMENT COMPONENTS

The "Electrical Equipment Rule" (August 25, 1982 47 FR 37342) authorized indefinitely the use of many types of "Non-PCB" (less than 50 ppm) electrical equipment. These authorizations include: transformers, voltage regulators, capacitors, electromagnets, switches, circuit breakers, reclosers, and cable. For each of these categories, the "Electrical Equipment Rule" authorized use at the less than 50 ppm level without any corresponding use conditions restricting that use. In other words, as long as no fluids 50 ppm or greater PCBs are introduced into such equipment, there are no restrictions on the servicing of this equipment, including its rebuilding. Also, intact "Non-PCB" electrical equipment is free from any requirement to obtain exemptions from the processing and distribution in commerce bans under TSCA. Thus, this equipment is essentially free from TSCA regulation.

Since the promulgation in 1979 of the PCB ban rule, drained, obsolete transformers (formerly containing less than 50 ppm PCBs) may be disposed of as salvage. Although described as a form of unregulated disposal, a qualification on permissible salvage operations is that they must bring about the termination of the useful life of PCBs and PCB Items. So, salvaging which accomplishes metals recovery through the smelting of transformer components qualifies as "disposal" under TSCA if the PCBs are eliminated by the smelting process.

EPA has determined that recycling activities involving equipment components with PCB concentrations less than 50 ppm do not present any significantly greater risks than other activities connected with the unrestricted use and servicing of "Non-PCB" electrical equipment.

Based upon this evaluation, EPA included "Non-PCB" equipment components (when generated by authorized rebuilding or salvaging) within the exclusion for "Excluded PCB Products." These components may now be freely incorporated into other electrical equipment, or distributed in commerce for the purpose of reuse in electrical equipment provided the components comply with the definition of "Excluded PCB Products."

To summarize:

- Electrical equipment with PCB contamination less than 50 ppm may be dismantled (processed) and the components reused in repair and rebuilding activities provided the components comply with the definition of "Excluded PCB Products" (761.3).

- Electrical equipment with PCB contamination less than 50 ppm may also be sold (distributed in commerce) to be dismantled (processed) for reuse in repair and rebuilding activities provided the components comply with the definition of "Excluded PCB Products" (761.3).

- Drained electrical equipment with PCB contamination less than 500 ppm may be scrapped or salvaged for metals recovery as a method of unregulated disposal provided that: (1) these practices do not result in spills or uncontrolled discharges of PCBs, and (2) these practices must bring about the termination of the useful life of PCBs or PCB Items.

- Drained electrical equipment with PCB contamination 50-499 ppm (known or assumed) may not be dismantled (processed) for the purpose of reusing the equipment components to repair or rebuild other electrical equipment.

- Drained electrical equipment with PCB contamination 50-499 ppm (known or assumed) may not be sold or traded (distributed in commerce) for the purpose of reusing the equipment components to repair or rebuild other electrical equipment.

CHAPTER XI

RECYCLED PCBS AND EXCLUDED MANUFACTURING PROCESSES

-RECYCLED PCBs AND EXCLUDED MANUFACTURING PROCESSES-

The 1984 PCB "Uncontrolled Rule" allowed the manufacture, processing, distribution in commerce, and use of certain PCBs (less than 50 ppm) under the definitions of "Recycled PCBs" and "Excluded Manufacturing Processes."

RECYCLED PCBs

EPA has concluded that excluding low-level PCB materials involved in certain recycling processes would not present an unreasonable risk to health or the environment. EPA included within the definition of "recycled PCBs" two industries: 1) paper and pulp manufacturers, and 2) manufacturers of asphalt roofing materials. Processes which recycle PCBs in paper products and asphalt roofing materials must meet the following requirements:

- There are no detectable concentrations of PCBs in asphalt roofing material products leaving the processing site.
- The concentration of PCBs in paper products leaving any manufacturing site processing paper products, or in paper products imported into the United States, have an annual average of less than 25 ppm, and not exceeding a 50 ppm maximum at any given time.
- The release of PCBs at the point at which emissions are vented to ambient air must be less than 10 ppm.
- The amount of Aroclor PCBs added to water discharged from an asphalt roofing processing site must at all times be less than 3 micrograms per liter (µg/L) for total Aroclors (roughly 3 parts per billion). Water discharges from the processing of paper products must at all times be less than 3 micrograms per liter (µg/L) for total Aroclors (roughly 3 ppb), or comply with the equivalent mass-based limitation.

Q1: Does the 3 parts per billion (ppb) discharge limit for pulp and paper mills apply only to direct discharges?

A1: Yes, the discharge limit for pulp and paper mills applies only to direct discharges. It does not apply to paper mills that discharge into publicly owned treatment works (POTWs).

- Disposal of any other process wastes at concentrations of 50 ppm or greater must be in accordance with 761.60.

EXCLUDED MANUFACTURING PROCESSES

The 1984 PCB "Uncontrolled Rule" also amended the PCB regulations by replacing the definitions of "Closed Manufacturing Process" and "Controlled Waste Manufacturing Process" with a generic exclusion now defined as "Excluded Manufacturing Processes." This established limits for PCB releases in products, air emissions, water effluents, and wastes. In sum, EPA has prescribed a generic exclusion to manufacture, process, distribute in commerce, and use inadvertently generated PCBs in accordance with the definition of "Excluded Manufacturing Process" provided that:

- PCBs in products leaving the manufacturing site are limited to an annual average of less than 25 ppm, and not exceeding a 50 ppm maximum at any given time.

- Where the product is detergent bars, PCB concentrations in the product are limited to less than 5 ppm.

- PCBs added to water discharges from the manufacturing site are limited to less than 100 micrograms per resolvable gas chromatographic peak per liter of water discharged.

- Releases of PCBs in air emissions are limited to less than 10 ppm at the point where emissions are vented.

- Disposal of any other process wastes at concentrations of 50 ppm or greater must be in accordance with 761.60.

CHAPTER XII

PCB STORAGE REQUIREMENTS

-PCB STORAGE REQUIREMENTS-

Storage of PCBs became regulated in 1979 with the promulgation of the "PCB Ban Rule." Since those earliest PCB regulations, the storage requirements for PCBs have remained virtually unchanged but for a very few amendments found in the 1982 "Electrical Equipment Rule." However, the improper storage of PCBs remains one of the most frequent areas of non-compliance based upon EPA inspection reports from regional EPA offices.

Complying with the storage requirements for PCBs involves:

- Establishing a proper storage facility for PCBs.
- Utilizing proper containers for PCB storage.
- Managing PCB storage in accordance with marking, recordkeeping, and inspection requirements.
- Understanding which PCBs and PCB Items require storage and the various storage options which are available.
- Removal from storage and disposal of PCBs and PCB Items within the 1-year disposal time limitation.

PCB storage requirements apply to those PCBs and PCB Items with PCB concentrations of 50 ppm or greater (or PCBs less than 50 ppm as a result of dilution from 50 ppm or greater material) including those PCBs and PCB Items which EPA requires to be assumed to be 50 ppm or greater. Generally, PCB storage requirements apply to PCBs and PCB Items which have been removed from service and designated for disposal. However, PCB storage requirements also apply to any PCB liquids (50 ppm or greater) in PCB Containers which are being stored for authorized servicing of electrical equipment. PCB and PCB-Contaminated Electrical Equipment being stored for reuse (stock) is considered by the Agency to be "in-service" and does not require storage in a PCB storage facility.

The new Notification and Manifesting Rule adopts an approval process for commercial PCB waste storers. The term "commercial storer" is defined broadly to mean any facility that stores PCB wastes generated by others, or that brokers waste generated during electrical equipment servicing.

The rule allowed commercial storers a 180-day period of interim approval (from February 5, 1990 to August 2, 1990), within which they must have applied for approvals from their EPA Regional Administrators (or from the Director, CMD/OPPT for approval of commercial storage areas at disposal facilities approved by Headquarters).

The issuance of a final storage approval will follow a review of the environmental compliance history of the company and its principals and key employees. The Regional Administrator must be satisfied that the applicant is qualified to engage in the commercial storage business. Also, applicants will be required to submit acceptable closure plans and demonstrate their financial responsibility for closure. The requirement to demonstrate one's financial responsibility can generally be satisfied by one or more of the financial assurance mechanisms described in current RCRA regulations for hazardous waste facilities. Finally, applicants will be required to certify their compliance with the TSCA storage facility standards, and to estimate the maximum quantities of PCB waste that will be handled at the facility.

Q1: Is electrical equipment being stored for "repair" considered "in use" or "removed from service" by EPA?

A1: In the opening paragraph to the "Storage and Disposal" subpart of the PCB regulations (761.60), it is indicated that the regulations do not require "...removal of PCBs and PCB Items from service earlier than would normally be the case." It is very important to understand that the term "removed from service," when used in the regulations, specifically means that PCBs and PCB Items have been designated for disposal to terminate or end the useful life which they were originally designed for. In fact, it is the policy of the agency that once a PCB Item has been "removed from service" for disposal, it cannot be placed back "in service" for continued use including repairing the item for further use.

There has been considerable misunderstanding of the term "removed from service" by those in the regulated community, especially electric utilities that for years have considered electrical equipment being "changed out" and brought in from their system to be repaired, serviced, or placed back into stock for reuse as being "removed from service." This is not what EPA means when the regulations refer to PCB Items

being "removed from service." To the contrary, EPA considers electrical equipment being stored for repair and/or reuse to be just as "in use" as those on-line units being actively used within the electric system.

On the other hand, questions have been raised about the continued legality of storing nonfunctional electrical equipment indefinitely for repair when the owner or user of the equipment has no intention of actually repairing the equipment or does not complete repairs within a reasonable amount of time. Such indefinite storage of equipment which may ultimately be disposed of thwarts the intent of the 1-year restriction on storage for disposal. EPA promulgated the storage for disposal requirements in the 1978 "Marking and Disposal" Rule due to the concern that long-term storage could lead to deterioration of PCB Containers and PCB Articles and result in the release of PCBs. Consequently, the agency may enforce against lengthy "storage for reuse" of equipment which is not reasonably expected to be placed back into service.

PCB STORAGE FOR DISPOSAL FACILITIES

Establishing a PCB storage facility which meets the criteria listed under 761.65(b) does not necessarily require tremendous expense, space, or technical engineering. In fact, many facilities which store small quantities of PCBs and PCB Items are able to set up a designated PCB storage area involving minimal space and expense but which complies with all regulatory requirements. On the other hand, some facilities have need of larger, more elaborate PCB storage facilities to meet the greater volume of PCBs and PCB Items being processed and stored for disposal. In either case, owners or operators of facilities used for the storage of PCBs and PCB Items shall comply with the following requirements:

- The facility shall have adequate roof and walls to prevent rainwater from reaching the stored PCBs and PCB Items [761.65(b)(1)(i)].

- The facility shall have an adequate floor which has continuous curbing with a minimum 6-inch high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or PCB Container stored therein or 25 percent of the

total internal volume of all PCB Articles or PCB Containers stored therein, whichever is greater [761.65(b)(1)(ii)].

- The facility shall have no drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area [761.65(b)(1)(iii)].

- The facility shall have floors and curbing constructed of continuous smooth and impervious materials, such as portland cement concrete or steel, to prevent or minimize penetration of PCBs [761.65(b)(1)(iv)].

- The facility shall not be located at a site that is below the 100-year flood water elevation [761.65(b)(1)(v)].

Q2: Can PCBs be stored for disposal without having to set up a "PCB storage facility"?

A2: The regulations include optional storage methods for PCBs such as "30-day temporary storage" by a generator and "pallet storage." (See Storage Options.) However, in all cases where PCBs 50 ppm or greater (known or assumed) are stored for disposal for more than 30 days, a PCB storage facility is necessary. Liquid PCBs 500 ppm or above may not be stored temporarily.

Q3: Does a facility have to construct a special building specifically for PCB storage or can a portion of an existing building be used to properly store PCBs?

A3: EPA does not require the construction of a separate building for proper storage of PCBs and PCB Items. It is allowable to use an existing structure to act as a PCB storage facility provided all of the criteria of 761.65(b) are met. Also, the use of an entire building (whether new or existing) solely for the storage of PCBs is not specifically required. A designated area within the building reserved for PCB storage is permissible; however, in those instances where only a portion of a building is being used as a PCB storage facility, that area should be clearly marked and segregated from other activities within the structure.

Q4: Do owners and users of PCBs have to pour expensive concrete floors and curbing to meet the criteria for a PCB storage

facility, or are other less expensive options available?

A4: The PCB regulations specifically mention "adequate floors" and "continuous curbing" in the requirements for PCB storage facilities. However, EPA has generally allowed flexibility in this area such as the use of a stock tank or metal box to meet the "berming" criteria requirement for a proper PCB storage facility. These optional "berms" must be constructed of smooth impervious materials and must meet the minimum 6-inch height and volume requirements under 761.65(b)(1)(ii). Also, a stock tank or metal box must not have any drains, seams, or other openings that would permit liquids to flow from the containment area.

STORAGE OPTIONS

As mentioned earlier, the regulations outline two options for storing PCBs in areas other than a "PCB storage facility." These two storage options are often referred to as "30-day temporary storage" and "pallet storage."

"Thirty-day temporary storage" [761.65(c)(1)] allows the generator to store certain PCB Items in an area that does not comply with the requirements for a PCB storage facility for up to 30 days from the date of their removal from service for disposal provided that a notation is attached to the PCB Item or PCB Container indicating the date the item was removed from service for disposal. PCB Items which can be stored under this 30-day temporary storage option include:

- Nonleaking PCB Articles and PCB Equipment [761.65(c)(1)(i)].
- Leaking PCB Articles and PCB Equipment if the PCB Items are placed in a nonleaking PCB Container that contains sufficient sorbent materials to absorb any liquid PCBs remaining in the PCB Items [761.65(c)(1)(ii)].
- PCB Containers containing nonliquid PCBs such as contaminated soil, rags, and debris [761.65(c)(1)(iii)].
- PCB Containers containing liquid PCBs at a concentration between 50 and 500 ppm, provided a

Spill Prevention, Control, and Countermeasure Plan has been prepared for the temporary storage area in accordance with 40 CFR 112. In addition, each container must bear a notation that indicates that the liquids in the drum do not exceed 500 ppm PCB [761.65(c)(1)(iv)].

Another storage option outlined in the PCB regulations is often referred to as "pallet storage." Pallet storage allows certain PCB Items to be stored temporarily on pallets next to a PCB storage facility that meets the requirements of 761.65(b)(1). However, pallet storage is permitted only when the PCB storage facility has immediately available unfilled storage space equal to 10 percent of the volume of the PCB Items being stored on pallets next to the facility [761.65(c)(2)]. PCB Items which can be stored under this "pallet storage" option include:

- Nonleaking and structurally undamaged PCB large, high-voltage capacitors, and
- PCB-Contaminated Electrical Equipment (known or assumed 50-500 ppm) that have not been drained of free-flowing dielectric fluid [761.65(c)(2)].

These PCB Items must be checked weekly when stored outside the facility and leaking PCB Items must be placed inside the storage area.

Q5: Is the 30-day temporary storage option available for commercial storage and disposal facilities?

A5: No. Temporary storage applies only to generators of PCB waste items since they are the only ones who have access to the PCB Items immediately after their removal from service for disposal.

Q6: Does temporary storage provide generators of PCB waste with an additional 30 days to the 1-year storage and disposal time limitation?

A6: No. Thirty-day temporary storage is included in the total 1-year storage and disposal time limitation.

Q7: Is pallet storage allowed for a facility that doesn't have a PCB storage facility?

A7: No. Pallet storage is only allowed when located next to a

PCB storage facility that meets the requirements of 761.65(b)(1).

Q8: Does pallet storage have to be indoors?

A8: No, provided that the PCB Capacitors and/or PCB-Contaminated Electrical Equipment being stored for disposal are on pallets located adjacent to the building which houses the PCB storage facility.

MARKING/LABELING

All PCB storage areas including the "PCB storage facility" as well as "30-day temporary storage" and "pallet storage" areas must be marked/labeled in accordance with the EPA marking requirement at 761.40(a)(10).

HANDLING EQUIPMENT

Any movable equipment that is used for handling PCBs and PCB Items in the PCB storage facility, and that comes in direct contact with PCBs, shall not be removed from the storage facility area unless it has been decontaminated by swabbing the surfaces that have contacted PCBs with a solvent that meets the criteria of 761.79(a). The solvent may be reused for decontamination until it contains 50 ppm PCBs. The solvent and any nonliquid PCBs that result from the decontamination must then be disposed of in accordance with 761.60(a) and 761.60(a)(4) respectively.

INSPECTIONS

All PCB Articles and PCB Containers in the PCB storage facility must be inspected for leaks at least once every 30 days. Any leaking PCB Articles and PCB Containers and their contents shall be transferred immediately to properly marked nonleaking containers. Any spilled or leaked materials shall be immediately cleaned up, using sorbents and/or other adequate means, and the PCB-Contaminated materials and residues shall be disposed of in accordance with PCB disposal requirements [761.65(c)(5)].

Any PCB Capacitors and PCB-Contaminated Electrical Equipment stored adjacent to the PCB storage facility on pallets must be inspected for leaks weekly [761.65(c)(2)].

STORAGE CONTAINERS

Containers used for the storage of PCBs (known or assumed 50 ppm or greater) shall comply with the shipping container specifications of the Department of Transportation (DOT).

Containers approved under TSCA at 761.65(c)(6) for the storage of liquid PCBs include:

- DOT-5 steel drum without removable head
- DOT-5B steel drum without removable head
- DOT-6D overpack with DOT-2S or DOT-2SL molded polyethylene containers
- DOT-17E single trip steel drum without removable head

Containers approved for the storage of nonliquid PCBs include:

- DOT-5 steel drum without removable head
- DOT-5B steel drum without removable head
- DOT-17C single trip steel drum with removable head

As an alternate, containers larger than those specified in DOT specifications 5, 5B, or 17C may be used for nonliquid PCBs if the containers are designed and constructed in a manner that will provide as much protection against leaking and exposure to the environment as the DOT specification containers, and are of the same relative strength and durability as the DOT specification containers [761.65(c)(6)].

Storage containers for liquid PCBs can be larger than the containers listed above (i.e., bulk storage tanks) provided that:

- The containers are designed, constructed, and operated in compliance with Occupational Safety and Health Standards [29 CFR 1910.106] for flammable and combustible liquids [761.65(c)(7)(i)].

- Before using these containers/bulk tanks for storing PCBs, the design of the containers must be reviewed 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 [761.65(c)(7)(i)].

- Owners or operators of any facility using these containers/bulk tanks shall prepare and implement a Spill Prevention Control and Countermeasure (SPCC) Plan [761.65(c)(7)(ii)].

Q9: Can I use a storage container for PCB waste other than those specifically referenced in 761.65(c)(6)?

A9: Yes. The PCB regulations, as currently written, essentially require the use of the "cadillac" of 55-gallon drums for PCB containment, shipment, and storage. The design specifications and engineering criteria used in the manufacture of these drums are, in DOT's opinion, not really necessary, given the physical and chemical properties of PCBs. Therefore, EPA will defer to the expertise of DOT as far as testing drums is concerned, and would allow the use of an alternate drum if it has been demonstrated to DOT's satisfaction that the alternate container will protect against leaking and exposure to the environment of PCBs.

Q10: The regulations define a PCB Transformer as containing 500 ppm or greater PCBs. However, there is no specific PCB level mentioned under the definition of a "PCB Container." Has EPA established a regulatory PCB level for PCB Containers in relation to marking/labeling, storage, and recordkeeping?

A10: Yes. The term "PCB Container" as found under the marking, storage, disposal, and recordkeeping sections of the TSCA regulations, specifically applies to drums, bulk tanks, and other containers (defined under 761.3) containing PCBs in concentrations of 50 ppm or greater. This 50 ppm regulatory level applies to "PCB Article Containers" as well.

Prior to disposal, an undrained PCB Container with PCB concentrations at 50 ppm or greater shall be stored in a PCB storage facility. Unless decontaminated, a PCB Container containing PCBs in concentrations of 50 ppm or greater shall be disposed of in accordance with 761.60(c). For a PCB Container to be decontaminated, it must be flushed three times with a solvent containing less than 50 ppm PCBs. The solubility of PCBs in the solvent must be 5 percent or more

by weight. Each rinse shall use a volume of normal diluent equal to approximately 10 percent of the PCB Container capacity. The solvent may be reused for decontamination until it contains 50 ppm PCB [761.79(a)]. The solvent shall then be disposed of as liquid PCBs in accordance with 761.60(a). Nonliquid PCBs resulting from decontamination procedures shall also be disposed of in accordance with 761.60(a)(4).

STORAGE MANAGEMENT

PCB storage management goes beyond simply setting up a PCB storage area and using proper DOT drums. To effectively store PCBs and PCB Items in accordance with federal PCB regulations, a facility must also develop and maintain appropriate storage practices and storage records.

PCB storage must be managed so that PCB Articles and PCB Containers can be located by the date they entered storage. To accomplish this, all PCB Articles and PCB Containers must be dated on the article or container when they are placed in the "PCB Storage Facility" [761.65(c)(8)]. Attaching dates to PCB Articles and PCB Containers applies to "30-day temporary storage" and "pallet storage" as well.

Owners or operators of facilities which store PCBs and PCB Items must establish and maintain records on the storage and disposition of PCBs in accordance with 761.180(b). (See chapter XV, on "Recordkeeping and Reporting," for a detailed discussion of PCB storage records.) For PCB Containers, these records should include: container contents, PCB concentration (ppm), the container's total volume, unique identification number, date placed in transport for disposal, and date disposed of, if known. These records will form the basis of a required "Annual Records" to be prepared by the facility, and therefore the information should be carefully logged and maintained for future need. If a facility is utilizing "bulk" storage of PCBs in containers/bulk tanks larger than 55-gallon DOT drums, the facility must also maintain records for each batch of PCBs added to the containers. These records must include the quantity of the batch and the date the batch was added to the container. The records shall also include the date, quantity, and disposition of any batch of PCBs removed from the container [761.65(c)(8)].

Finally, PCB storage must be managed so that PCB Articles

and PCB Containers stored for disposal are removed from storage and disposed of within 1 year from the date the articles were removed from service for disposal or the first batch of PCBs was placed in the container for storage for disposal.

Q11: The regulations indicate that PCBs must be disposed of within 1 year. How long can PCBs be stored for disposal prior to shipment to the final disposal site?

A11: The PCB regulations require the disposal of PCBs within the 1-year disposal deadline. EPA has adopted a written policy (TSCA Compliance Program Policy No. 6-PCB-6) which provides that a generator delivering PCB waste to a disposal facility later than 90 days before the end of 1-year disposal deadline will be held liable if the disposal facility cannot dispose of the waste in time. If the generator delivers the waste with 90 days or more remaining in the 1-year deadline, the disposer is responsible for disposing of the material before the deadline. The disposer will share in any liability if he does not dispose of PCB waste within 90 days from the date it is received at the disposal facility. In sum, the generator has 9 months of the 1-year disposal timeframe to store PCBs and transport those PCBs to the final disposition site.

Q12: As a generator of PCB waste, our facility regularly contracts a disposal "broker" to pick up and transport our PCB waste to a PCB disposal site. Normally, these "brokers" will transport our PCB waste to their facility for storage and consolidation with PCB waste from other generators. How long can our PCB waste be stored by a broker?

A12: A disposal "broker" is merely an extension of the generator in terms of the 1-year disposal deadline. That is, the generator remains liable if the disposal "broker" fails to deliver the PCB waste to the disposal site in time for the waste to be disposed of within the 1-year deadline. In sum, EPA places the responsibility for delivering PCB waste to a disposal facility at least 90 days before the 1-year deadline on the generator of the waste and does not allow additional time for PCB waste to be processed and/or stored by disposal brokers or commercial storage facilities.

CHAPTER XIII

PCB DISPOSAL REQUIREMENTS

- PCB DISPOSAL REQUIREMENTS -

Disposal of PCBs became regulated in 1978 with the promulgation of the "PCB Marking and Disposal" Rule. In this final Rule, EPA prescribed various disposal requirements for PCBs and PCB Items, and also established the 500 parts per million (ppm) regulatory cutoff for the disposal of PCBs. In the "PCB Ban Rule" published in the Federal Register on May 31, 1979 (44 FR 31514), the regulatory cutoff for PCBs was changed from 500 to 50 ppm. In that same Federal Register, EPA published its "anti-dilution" provision [40 CFR 761.1(b)] which effect the disposal of PCBs. The provision states: "No provision specifying a PCB concentration may be avoided as a result of any dilution, unless otherwise specifically provided". Thus, in general, materials are required to be disposed of according to their original concentration.

PCB LIQUIDS WITH CONCENTRATIONS OF 500 PPM OR GREATER

All PCB liquids and industrial sludges with PCB concentrations of 500 ppm or greater must be disposed of in a TSCA incinerator that complies with 761.70 [761.60(a)(1)] or by an alternate method permitted under 761.60(e).

MINERAL OIL DIELECTRIC FLUID AND OTHER LIQUIDS (50-499 ppm PCB) - 761.60(a)(2) and (3)

Mineral oil dielectric fluid from PCB-contaminated electrical equipment containing a PCB concentration of 50-499 ppm (known or assumed) and liquids other than mineral oil dielectric fluid containing a PCB concentration of 50-499 ppm, must be disposed of in one of the following:

- In a TSCA incinerator that complies with 761.70.
- In a chemical waste landfill that complies with 761.75 if information is provided to the owner or operator of the chemical waste landfill that shows that the mineral oil dielectric fluid does not exceed 500 ppm PCB and is not an ignitable waste as described in 761.75(b)(8)(iii). (NOTE: After July 8, 1987 land disposal of liquid hazardous wastes containing 50 ppm or greater PCB is prohibited under the Land Disposal Reduction

Program of RCRA, unless an exemption is granted.)

- In a high efficiency boiler that complies with 761.60(a)(2)(iii)(A).

- By an alternative EPA approved method that complies with 761.60(e), such as chemical detoxification, biological treatment, and physical separation.

NONLIQUID PCBs (50 ppm OR GREATER) - 761.60(a)(4)

Nonliquid PCBs at concentrations of 50 ppm or greater in the form of contaminated soil, rags, or other debris must be disposed of in one of the following:

- In an incinerator that complies with 761.70.

- In a chemical waste landfill that complies with 761.75. (NOTE: Except as provided in 761.75(b)(8)(ii), liquid PCBs shall not be processed into nonliquid forms to circumvent the high temperature incineration requirements of 761.60(a).

. By an alternate method permitted under 761.60(e).

PCB TRANSFORMERS (500 ppm OR GREATER PCB) - 761.60(b)(1)

PCB Transformers with PCB concentrations 500 ppm or greater must be disposed of in accordance with either of the following:

- In an incinerator that complies with 761.70.

- In a chemical waste landfill that complies with 761.75 provided that the transformer is first drained of all free-flowing liquid, filled with solvent, allowed to stand for at least 18 hours, and then drained thoroughly. PCB liquids and solvents that are removed shall be incinerated in accordance with 761.60(a). Solvents may include kerosene, xylene, toluene, and other solvents in which PCBs are readily soluble (5% or more).

. By an alternate method permitted under 761.60(e).

PCB CAPACITORS - 761.60(b)(2)

The disposal of any capacitor shall comply with the following requirements unless it is known from label or nameplate information, manufacturer's literature, or chemical analysis (test results) that the capacitor does not contain PCBs.

LARGE, HIGH- OR LOW-VOLTAGE PCB CAPACITORS - 761.60(b)(2)(iii)

Any large, high- or low-voltage capacitor which contains 500 ppm or greater PCBs must be disposed of in an incinerator that complies with 761.70 or through an alternate method permitted under 761.60(e).

SMALL PCB CAPACITORS - 761.60(b)(2)(ii)

Intact, nonleaking PCB small capacitors may be disposed of as municipal solid waste except that manufacturers who at any time manufactured PCB small capacitors or equipment containing a PCB small capacitor must dispose of PCB small capacitors in an incinerator that complies with 761.70. Small capacitors that are not intact or are leaking must be incinerated. EPA recommends that disposers of large quantities of small PCB capacitors dispose of them in a TSCA-approved incinerator. Readers are advised to check with their Regional PCB Coordinator to determine the specific regional policy on disposal of small capacitors.

PCB-CONTAMINATED ELECTRICAL EQUIPMENT (50-499 ppm PCB) - 761.60(b)(4)

PCB-contaminated electrical equipment, except capacitors, with PCB contamination 50-499 ppm shall be disposed of by draining all free-flowing liquid from the electrical equipment and disposing of the liquid in accordance with 761.60(a)(2) or (3). The disposal of the drained carcass is not regulated.

Capacitors that contain 50-499 ppm PCBs must be disposed of in an incinerator that complies with 761.70 or in a chemical waste landfill that complies with 761.75.

PCB CONTAINERS - 761.60(c)

Unless decontaminated in accordance with 761.79, PCB Containers with PCB concentrations of 500 ppm or greater must be disposed of in one of the following:

- In an incinerator that complies with 761.70.
- In a chemical waste landfill that complies with 761.75 provided that if there are PCBs in a liquid state, the PCB Container shall first be drained and the PCB liquid disposed of in accordance with 761.60(a)(2) or (3).

PCB Containers that used to contain PCB concentrations less than 500 ppm may be disposed of as municipal solid wastes, provided that the container is drained of any liquid PCBs and any liquid PCBs in concentrations 50 ppm or greater are disposed of in accordance with 761.60(a)(2) or (3). The container must also be emptied of any PCB solids 50 ppm or greater, and the solids disposed of in accordance with 761.60(a)(4).

PCB HYDRAULIC MACHINES - 761.60(b)(3)

PCB hydraulic machines containing PCBs at concentrations of 50 ppm or greater such as die casting machines may be disposed of as municipal solid waste or salvage provided that the machines are drained of all free-flowing liquid and the liquid is disposed of in accordance with 761.60(a)(2) or (3). If the PCB liquid contains 1000 ppm or greater, then the hydraulic machine must be flushed prior to disposal with a solvent containing less than 50 ppm PCB and the solvent disposed of in accordance with 761.60(a).

OTHER PCB ARTICLES - 761.60(b)(5)

Other PCB Articles with PCB concentrations at 500 ppm or greater must be disposed of in one of the following:

- In an incinerator that complies with 761.70.
- In a chemical waste landfill that complies with 761.75, provided that all free-flowing liquid PCBs have been thoroughly drained from any articles before the articles are placed in the chemical

waste landfill and that the drained liquids are disposed of in an incinerator that complies with 761.70.

Other PCB Articles with PCB concentrations at 50-499 ppm must be disposed of by draining all free-flowing liquid from the article and disposing of the liquid in accordance with 761.60(a)(2) or (3). The disposal of the drained article is not regulated.

DREDGED MATERIALS AND MUNICIPAL SEWAGE TREATMENT SLUDGE

All dredged materials and municipal sewage treatment sludge with PCB concentrations of 50 ppm or greater must be disposed of in an approved incinerator or in an approved chemical waste landfill, or by an approved alternative method.

SPILLS

Spills are included within the definition of "Disposal" at 761.3. Spills of PCBs at 50 ppm or greater are illegal disposal. PCBs that result from the cleanup of spills must be stored for disposal and disposed of according to the applicable regulations [761.60(d)(1) and (2)].

ALTERNATIVE DISPOSAL METHODS - 761.60(e)

Any person who is required to incinerate any PCBs and PCB Items as discussed in this chapter, and who can demonstrate that an alternative method of destroying PCBs and PCB Items exists and that this alternative method can achieve a level of performance equivalent to 761.70 incinerators or high efficiency boilers as provided in 761.60(a)(2) and (3), may submit a written request to either the Regional Administrator or the Director of the Chemical Management Division (CMD) for an exemption from the incineration requirements of 761.70 or 761.60. Requests for approval of alternate methods that will be operated in more than one region must be submitted to the Director of CMD except for research and development involving less than 500 pounds of PCB material. Requests for approval of alternate methods that will be operated in only one region must be submitted to the appropriate Regional Administrator. The applicant must show that his method of destroying PCBs will not present an unreasonable risk of injury to health or the

environment. On the basis of such information and any available information, the Regional Administrator or the Director of CMD may, in his discretion, approve the use of the alternate method if he finds that the alternate disposal method provides PCB destruction equivalent to disposal in a 761.70 incinerator or a 761.60 high efficiency boiler and will not present an unreasonable risk of injury to health or the environment. Any approval must be stated in writing and may contain such conditions and provisions as the Regional Administrator or the Director of CMD deems appropriate. The person to whom such waiver is issued must comply with all limitations contained in such determination.

Guidance documents for submitting alternate disposal method applications are available from the Operations Branch (7404) at EPA Headquarters in Washington, D.C.

CHAPTER XIV

PCB SPILL CLEANUP POLICY

- PCB SPILL CLEANUP POLICY -

EPA promulgated regulations on the disposal of PCBs in the Federal Register on February 17, 1978 and May 31, 1979. These early PCB regulations broadly defined the term "disposal" to include accidental as well as intentional releases of PCBs into the environment. Under these regulations, EPA considers intentional, as well as unintentional, spills, leaks, and other uncontrolled discharges of PCBs at concentrations of 50 parts per million or greater to be "improper disposal" of PCBs. When PCBs are improperly disposed of as a result of a spill of a material containing 50 ppm or greater PCBs, EPA has the authority to compel persons to take actions to rectify damage and/or cleanup contamination resulting from the spill.

For many years now, EPA standards for the cleanup of spilled PCBs have been established at the EPA Regional Office level. Each region established PCB spill cleanup standards in the form of general guidelines and then applied the general guidelines on a case-by-case basis for specific spill situations. Owners of spilled PCBs were required to meet these standards or face potential penalties for improper disposal of PCBs.

In establishing PCB spill cleanup standards on a regional basis, EPA has experienced inconsistency in the general guidelines and their application to spills from region to region. For certain spill situations, EPA Regional Offices have required cleanup only to 50 ppm PCBs. In other spill situations, regions have required cleanup to preexisting background levels, or to the limit of detection of PCBs. Most recently, EPA Regional Offices have applied the "lowest practicable level" guidelines set up in the January 27, 1984, decision on "General Electric v. U.S.E.P.A." However, the agency has experienced several areas of difficulty in applying the "lowest practicable level" approach to all PCB spills. First, the guideline is subject to, and has resulted in, disparate interpretations. Second, the term "lowest practicable level" cannot be easily applied by the regulated community without guidance from EPA, potentially resulting in delays in cleanup and prolonged exposures to humans and more widespread environmental contamination. Finally, the owner of PCBs may disagree with the EPA Regional Office's interpretation of the "lowest practicable level" standard. This may occur when the EPA Regional Office interpretation would require more stringent and

costly measures than the owner believes are warranted.

When addressing the subject of PCB spills, EPA has emphasized two very important ingredients. First, the timely cleanup of PCB spills. And second, establishing prudent, yet practicable, numerical criteria standards for PCB spills cleanup. Since 1982, EPA has had in place requirements for timely cleanup of certain PCB spills 50 ppm or greater. In the final PCB Electrical Equipment Rule published August 25, 1982, EPA required the initiation of spill cleanup from a PCB Transformer (500 ppm or greater) within 48 hours of spill discovery. However, the issue of timely cleanup of PCB spills from sources other than PCB Transformers (i.e., PCB Capacitors, PCB-Contaminated Electrical Equipment, etc.) was not addressed; and, the PCB Electrical Equipment Rule did not establish final cleanup standards for PCB spills.

Even though EPA did not finalize a PCB spill cleanup policy in 1982, the Agency has continued to evaluate available information on the risks posed by spilled PCBs and the costs associated with cleanup to various levels. EPA recognized that setting a nationwide PCB spill cleanup policy was a desirable goal and in the winter of 1984 produced a draft TSCA Compliance Monitoring Program Policy covering PCB spill cleanup. Although the 1984 draft was never officially released, members of the press and the public acquired and reviewed the draft policy. The Environmental Defense Fund (EDF), National Resources Defense Council (NRDC), Edison Electric Institute (EEI), Chemical Manufacturers Association (CMA), and National Electrical Manufacturers Association (NEMA), among others, were principal reviewers of the 1984 draft policy. On May 17, 1985, EDF, NRDC, EEI, CMA, and NEMA submitted to EPA an alternative PCB spill cleanup policy for consideration by the Agency. EPA viewed this alternative cleanup policy (referred to as the "Consensus Agreement") as a framework for completing its nationwide PCB spill cleanup policy and evaluated the Consensus Agreement as a source of information in developing the Agency's own policy. The Agency and the Consensus Group shared two general principles about the appropriate framework for a nationwide PCB spills cleanup policy: (1) that the policy should establish requirements designed to be effective in the large majority of spill situations; and, (2) that the risks posed by residual contamination (PCBs remaining after cleanup) vary depending upon the potential for human

exposures.

Because of the tremendous variety of PCB spill situations, developing a nationwide cleanup policy which incorporated timely cleanup with prudent numerical cleanup standards while at the same time maintaining a format that was practicable in areas of cost and implementation for the regulated community proved to be a very complicated and time-consuming task for the Agency. Consequently, EPA has developed its National PCB Spill Cleanup Policy based upon what the Consensus Group and others have indicated are the more "typical" and thus most common types of PCB spills, as well as the costs associated with cleanup following these most common types of spills. Typical PCB spills involve the limited release of PCBs during the course of EPA authorized activities such as: the use of electrical equipment (e.g., transformers and capacitors), the servicing of electrical equipment, and the storage for disposal of PCBs.

In establishing the cleanup policy for typical PCB spills, EPA recognized that the risks posed by spills of PCBs vary, depending upon the spill location and the amount of PCBs spilled. Therefore, the PCB Spill Cleanup Policy now requires cleanup of PCBs to different levels depending upon spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of the PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. Thus, the policy applies the most stringent requirements for PCB spill cleanup to areas where there is the greater potential for human exposures to spilled PCBs. The policy applies less stringent requirements for cleanup of PCB spills in areas where the type and degree of contact present lower potential exposures. Finally, even less stringent requirements apply to areas where there is little potential for any direct human exposure.

SCOPE OF THE POLICY

The PCB Spill Cleanup Policy establishes requirements for the cleanup of spills resulting from the release of materials containing PCBs at concentrations of 50 ppm or greater including materials which EPA requires to be assumed 50 ppm or greater (i.e., untested mineral oil dielectric fluid). The policy became effective on May 4, 1987, and applies only to spills which occur after that date. Existing spills which occurred prior to May 4, 1987 are

excluded from the policy and are to be cleaned up in accordance with requirements established at the discretion of EPA, usually through its Regional offices.

In addition, EPA excluded certain PCB spills from the policy based upon location. PCB spills which contaminate surface water, drinking water, sewers, animal grazing lands, and vegetable gardens are excluded from the final cleanup standards in the policy because these spills, due to their location, potentially pose significantly greater exposure risks to humans than those "typical" spills around which the policy has been developed. For these "excluded" spills, the responsible party shall report the spill to the Regional EPA Office and clean up the spill in accordance with site-specific requirements established by the EPA Regional Office. For all other PCB spills, EPA generally expects the final cleanup standards of the policy to apply. In sum:

- EPA's PCB Spill Cleanup Policy went into effect May 4, 1987.

- The policy applies to all PCB spills in concentrations 50 ppm or greater (known or assumed) which occur after May 4, 1987, except for certain "excluded" spills which occur in higher risk locations.

- "Excluded" spills are those which contaminate surface water, drinking water, sewers, animal grazing lands, and vegetable gardens. The cleanup levels found in the PCB Spill Cleanup Policy do not automatically apply to these spills. These spills must be reported to the appropriate EPA Regional Office no later than 24 hours after discovery and cleaned up in accordance with site-specific requirements as established by the Regional EPA Office. These spills are subject to all measures to minimize environmental contamination in the policy.

Q1: Why does EPA refer to these new cleanup requirements as "policy" instead of "regulations"?

A1: It is important to note that the PCB Spill Cleanup Policy is an EPA policy statement which applies to existing "spill/improper disposal" regulations. That is to say, when a PCB spill occurs, under existing regulations, "improper disposal" has taken place. The PCB Spill Cleanup Policy

provides a nationwide set of uniform reporting, cleanup, and recordkeeping standards which, if followed precisely, creates a presumption against both enforcement action for penalties and for further cleanup under TSCA. It is not a regulatory requirement that a PCB spill be cleaned up in accordance with the spill policy; however, if a responsible party wants EPA to presume that the responsible party should not receive penalties from EPA for improper disposal due to a PCB spill, the PCB Spill Cleanup Policy must be precisely followed.

KEY DEFINITIONS

The following are a few of the key definitions found in the PCB Spill Cleanup Policy. All of the definitions listed in the policy are not discussed here. Responsible parties should refer to 40 CFR Part 761.123 for a detailed list of all definitions found in the policy.

- **"Spill"** - The term as used in the policy means 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. The policy applies to spills of 50 ppm or greater PCBs. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled as opposed to the concentration of PCBs in the material onto which the PCBs were spilled. Where a spill of untested mineral oil occurs, the oil is presumed to contain greater than 50 ppm, but less than 500 ppm PCBs, and is subject to the relevant requirements of the policy.

Q2: The spill policy defines "spill" by including the word "leak" in the definition. Does this mean that all minor "leaks" from electrical equipment must be cleaned up in accordance with the spill policy?

A2: No. The spill policy only applies to leaks where "...the

release results in any quantity of PCBs running off or about to run off the external surface of the equipment." EPA has differentiated between these types of "migrating" leaks which have or are about to contaminate other materials. The policy does not apply to minor seepage ("weeps") from electrical equipment bushings or coverplates. However, it is important to understand that a minor leak of this type is still considered "improper disposal" of PCBs and must be controlled, repaired, and cleaned up by authorized servicing of electrical equipment if the responsible party wishes to continue to use or store for reuse the electrical equipment and avoid improper disposal penalties from EPA.

- **"Low-concentration PCBs"** - This term means PCBs that are tested and found to contain less than 500 ppm PCBs or those PCB-containing materials which EPA allows to be assumed to be at concentrations below 500 ppm (i.e., untested mineral oil dielectric fluid). Consequently, a "low-concentration" spill as referred to in the policy is a spill of material containing PCBs in concentrations of 50-499 ppm, including spills of untested mineral oil which must be assumed to be 50-499 ppm.

- **"High-concentration PCBs"** - This term means PCBs that contain 500 ppm or greater PCBs, or those materials which EPA requires to be assumed to contain 500 ppm or greater PCBs in the absence of testing. Consequently, a "high-concentration" spill as referred to in the policy is a spill of material containing PCBs in concentrations of 500 ppm or greater, including spills of material which must be assumed to be 500 ppm or greater (e.g., an untested transformer with no nameplate).

- **"Outdoor electrical substations"** - Outdoor electrical substations are outdoor, fenced-off, and restricted access areas used in the transmission and/or distribution of electrical power. For purposes of the spill policy, outdoor electrical substations are defined as being located at least 0.1 kilometer (km) from a residential/commercial area. Outdoor electrical substations which are located less than 0.1 km from a residential/commercial area are considered to be residential/commercial areas.

Q3: If a PCB spill occurs in an outdoor electrical substation located more than 0.1 kilometer from a residential/ commercial building but less than 0.1 kilometer from the residential/commercial property boundary line, should the spill be cleaned up as an outdoor electrical substation spill or a residential/commercial spill?

A3: EPA has established that when determining which spills fall under the cleanup requirements for "outdoor electrical substations," versus the more stringent cleanup requirements for "residential/commercial areas," the responsible party shall measure the 0.1 kilometer distance "...from the actual site of the spill to the edge of the building where people live or reside, or work."

- **"Double wash/rinse"** - The double wash/rinse procedural performance standard applied in the policy means a minimum requirement to cleanse solid surfaces two times with an appropriate solvent or other material in which PCBs are at least 5 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 the 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.

Q4: Can liquid cleaners and/or detergents be used throughout the double wash/rinse procedure, or must more conventional solvents such as kerosene be used?

A4: The spill policy allows the use of "other materials" in the double wash/rinse procedure provided that PCBs are at least 5 percent soluble by weight in the material. Currently, EPA has very little information on the effectiveness of utilizing various detergents and cleaners in PCB spills cleanup. The Agency is most interested in receiving input in this area and encourages those in the regulated community to submit relevant data pertaining to various detergents and other cleanup materials.

- **"Standard wipe test"** - For spills of high concentration PCBs and large, low-concentration

spills, the policy requires cleanup of solid surfaces to numerical surface standards and sampling by a standard wipe test to verify that the numerical standards have been met. This definition constitutes the minimum requirements for an appropriate wipe-testing protocol. A standard-size template (10 centimeters by 10 centimeters) will be used to delineate the area of cleanup; the wiping medium will be a gauze pad or glass wool of known size which has been saturated with hexane. It is important that the wipe be performed very quickly after the hexane is exposed to air.

- **"Spill area"** - This means the area of soil on which visible traces of the spill can be observed plus a buffer zone of 1 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 which must be cleaned.

- **"Spill boundaries"** - This term means 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 the policy.

Q5: What is the difference between the "spill area" and the "spill boundaries"?

A5: The "spill area" is simply that area where traces of the spilled material can be seen plus a 1-foot buffer zone. The "spill boundaries" on the other hand means the actual area of contamination and includes contamination that might not be visible with the naked eye.

PCB SPILL REPORTING REQUIREMENTS

EPA has established two basic reporting requirements for PCB spills under the TSCA spill policy. In addition, reporting may also be required under the Clean Water Act (CWA) or Comprehensive Environmental Response Compensation and Liability Act (CERCLA). For example, under the CERCLA National Contingency Plan, all spills involving 1 pound or more of PCB material must currently be reported to the National Response Center (NRC) at 1-800-424-8802. The reporting requirements found in the PCB Spill Policy are designed to be consistent with existing reporting requirements found in other regulatory acts. Simply stated, only those PCB spills occurring in certain high-risk areas, or PCB spills involving a significant volume of PCBs spilled, are required to be reported under the TSCA PCB Spill Cleanup Policy. These are:

- All PCB spills, 50 ppm or greater, which contaminate surface waters, sewers and sewer treatment plants, private or public drinking water sources, animal grazing lands, and vegetable gardens must be reported to the appropriate EPA Regional Office of Pesticides and Toxic Substances (see page xiv of this document) in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

- All PCB spills, 50 ppm or greater, involving 10 pounds or more of PCBs (generally 1 gallon of Askarel) must be reported to the appropriate EPA Regional Office of Toxics and Pesticides in the shortest possible time after discovery but in no case later than 24 hours after discovery.

Q6: When the spill policy refers to 10 pounds or more of PCBs, is the requirement to report a spill of 10 pounds or more of PCB containing material (i.e., oil and PCBs), or 10 pounds or more of actual PCBs on a dry-weight basis?

A6: The reporting requirement specified in the PCB spill policy only requires "...spills of 10 pounds of pure PCBs or more by weight to be reported."

NOTE: As of August 14, 1989, EPA changed the reportable quantity for PCBs to 1 lb. under the CERCLA National Contingency Plan, so that spills of 1 lb. or more of PCBs must be reported to the National Response Center. The PCB Spill Cleanup Policy has not been revised to reflect this change. Consequently, a 1 lb. or greater PCB spill must be

reported to the NRC but not to EPA. A PCB spill of 10 lbs. or more must be reported to the appropriate Regional Administrator.

DETERMINATION OF SPILL BOUNDARIES

For spills where there are insufficient visible traces yet there is evidence of a leak or spill, the boundaries of the spill are to be determined by testing the area for PCBs using a statistically based sampling scheme. (See Sampling/Testing Requirements.)

CLEANUP, RECORDKEEPING, AND TESTING REQUIREMENTS

The PCB Spill Cleanup Policy establishes four categories of PCB spills: (1) small, low-concentration spills, (2) large, low-concentration spills, (3) high-concentration spills, and (4) excluded spills. As discussed earlier, EPA recognized that the risks posed by spills of PCBs vary, depending upon the spill location and the amount of PCBs spilled. Therefore, the spill policy requires cleanup of PCBs to different levels depending upon spill location, the potential for exposure to residual PCBs remaining after cleanup, the concentration of PCBs initially spilled, and the nature and size of the population potentially at risk of exposure. The following is a general overview of the various cleanup, recordkeeping, and testing requirements found in the policy. Responsible parties should refer to 40 CFR 761.125 and 761.130 for detailed information.

SMALL, LOW-CONCENTRATION SPILLS

Small, low-concentration spills are spills of materials containing 50-499 ppm PCBs and which involve less than 1 pound of PCBs by weight or less than 270 gallons of untested mineral oil. These spills are considered to be the most typical and most common types of spills and usually involve smaller quantities of low-level PCBs. Consequently, EPA has established a basic "performance standard" for proper cleanup of spills of this type and requires specific records and statements of certification to be documented and maintained by the responsible party.

- **CLEANUP REQUIREMENTS:**

(1) All contaminated solid surfaces must be double washed/rinsed.

(2) Any contaminated indoor, residential surfaces must be cleaned to 10 micrograms per 100 square centimeters (10 µg/100 cm^2).

(3) All soil within the spill area (i.e., visible traces plus a 1 lateral foot buffer) must be excavated and the ground be restored to its original configuration by back-filling the area with clean soil (i.e., less than 1 ppm).

(4) The above cleanup must be completed within 48 hours of discovery of the spill.

Q7: Is "wipe testing" required following cleanup of a solid surface involved in a "small, low-concentration" spill?

A7: The only instance in which wipe testing would be required after cleanup of a small, low-concentration spill is if PCB contamination of an indoor, residential surface occurred. This type of solid surface would have to be wipe tested after cleanup and shown to contain no greater than 10 µg/100 cm^2 of residual PCB contamination. All other solid surfaces could simply be double washed/rinsed with no wipe testing required.

Q8: Is there a minimum depth requirement when excavating soil within the spill area?

A8: Due to the wide variety of ground media from one area of the country to another, EPA has placed no specific depth requirement in the performance standard for cleanup of small, low-concentration spills. Responsible parties should review each spill on a case-by-case basis and excavate soil to a reasonable depth based upon the type of soil and visible traces of spilled material.

Q9: The spill policy requires the excavated area be restored to its original configuration by back-filling the area with clean soil less than 1 ppm PCBs. Does back-fill soil have to be tested for PCBs prior to being used?

A9: No. EPA does not require soil to be used for back-filling to be tested and proven less than 1 ppm. Responsible parties should simply use soil which, to the best of their knowledge, contains no PCB contamination.

Q10: Can cleanup of an untested mineral oil spill be delayed to first test the mineral oil and determine if the spill is in

fact 50 ppm or greater?

A10: Untested mineral oil which must be assumed to contain 50-499 ppm PCBs can be tested to determine the actual PCB concentration. However, the PCB Spill Cleanup Policy does not provide for additional "testing time" which would delay initiation of the cleanup of a small, low-concentration spill beyond the 48-hour requirement.

Q11: Are there any instances in which the initiation of cleanup of a small, low-concentration spill may be delayed beyond 48 hours?

A11: Yes. Initiation of cleanup may be delayed beyond 48 hours in case of circumstances including but not limited to: civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons for delay.

- **RECORDKEEPING AND CERTIFICATION REQUIREMENTS:**

  At the completion of cleanup of a small, low-concentration spill, the responsible party or appropriate agent must document the cleanup with records and certification of decontamination. The records and certification must be maintained for a period of 5 years. The records and certification must include the following:

  (1) The source of the spill (e.g., type of equipment).
  (2) The date and time the spill occurred (actual or estimated).
  (3) The date and time cleanup was completed or terminated.
  (4) The nature and duration of why initiation of cleanup was beyond the 48-hour requirement.
  (5) A brief description of the spill location.
  (6) Precleanup sampling data used to determine spill boundaries if there were insufficient visible traces.
  (7) A brief description of any solid surfaces which were double washed/rinsed and the methods used.

  (8) The approximate depth of soil excavation and the amount of soil removed.

(9) A certified statement signed by the responsible party (e.g., facility manager or foreman) stating that the cleanup requirements have been met and that the information contained in the records is true to the best of his/her knowledge.

LARGE, LOW-CONCENTRATION SPILLS AND HIGH-CONCENTRATION SPILLS OF ANY QUANTITY

The next two categories of PCB spills established in the PCB Spill Cleanup Policy are large, low-concentration spills and high-concentration spills of any amount of PCBs.

Large, low-concentration spills are spills of materials containing 50-499 ppm PCBs and which involve more than 1 pound of PCBs by weight or more than 270 gallons of untested mineral oil. These spills involve larger quantities of low-level PCBs and thus present more widespread contamination and a greater risk of potential exposure to humans.

High-concentration spills are spills of materials containing PCBs in concentrations of 500 ppm or greater. PCB spills of these higher level concentrations, in any quantity, present a more significant risk of exposure to humans.

Because of the greater risk of potential exposure to humans from large, low-concentration spills and all high-concentration spills, EPA requires more stringent and detailed numerical cleanup standards for these types of spills. Numerical cleanup standards are based upon the spill location with the most stringent requirements applied to PCBs spilled in residential/commercial/unrestricted access rural areas. The spill policy allows for less-stringent numerical cleanup standards for PCBs spilled in industrial and other restricted-access areas such as utility power plants. And finally, the least stringent numerical cleanup standards apply to PCB spills in outdoor electrical substations.

In order to simplify the PCB Spill Cleanup Policy to the extent possible, EPA structured the policy so that the cleanup, recordkeeping, and testing requirements for "large, low-concentration spills" and "high-concentration spills" are identical. The following is a brief overview of these requirements based upon spill location. Responsible parties should refer to 40 CFR 761.125 for detailed requirements and

standards.

- **IMMEDIATE REQUIREMENTS:**

  The following four actions must be taken as quickly as possible and within no more than 24 hours (48 hours for PCB Transformer spills) after discovery of the spill.

  (1) Report the spill to the NRC if 1 pound or more of pure PCBs were spilled, and to the EPA Regional Office if 10 lbs. or more of pure PCBs were spilled.
  (2) Effectively cordon off and restrict access to the spill area plus a 3-foot buffer, and place clearly visible signs advising persons to avoid the area.
  (3) Record and document the spill area noting the extent and center of all visible traces. If there are no visible traces, contact the EPA Regional Office for guidance in completing a statistical sampling of the spill area to determine spill boundaries.
  (4) Initiate cleanup of all visible traces on solid surfaces and initiate excavation of any visibly contaminated soil.

Q12: Are there any instances in which the "immediate requirements" for large, low-concentration and high-concentration spills may be delayed beyond 24 hours?

A12: Yes. The above immediate requirements (2), (3), and (4) may be delayed beyond 24 hours in case of circumstances including but not limited to: civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons for delay.

- **CLEANUP REQUIREMENTS - OUTDOOR ELECTRICAL SUBSTATIONS:**

  (1) Contaminated solid surfaces must be cleaned to a level not exceeding PCB concentrations of 100 µg/100 cm^2.
  (2) Contaminated soil must be excavated to 25 ppm PCBs, or to 50 ppm PCBs provided that a notice indicating the 50 ppm PCB level is visibly placed in the area.

- **CLEANUP REQUIREMENTS - OTHER RESTRICTED ACCESS AREAS:**

  (1) Contaminated solid surfaces must be cleaned to either 10 µg/100 cm^2 or 100 µg/100 cm^2 depending upon whether the contaminated surface is indoors or outdoors, high-contact or low-contact, impervious or nonimpervious. Responsible parties should refer to 40 CFR 761.125 for a detailed description of final numerical cleanup standards.

  (2) Contaminated soil must be excavated to 25 ppm PCBs.

- **CLEANUP REQUIREMENTS - NONRESTRICTED ACCESS AREAS:**

  (1) Contaminated furnishings, toys, and other easily replaceable household items must be disposed of in accordance with disposal requirements under 40 CFR 761.60 and replaced by the responsible party.

  (2) Contaminated solid surfaces must be cleaned to either 10 µg/100 cm^2 or 100 µg/100 cm^2 depending on whether the contaminated surface is indoors or outdoors, high-contact or low-contact, impervious or nonimpervious. Responsible parties should refer to 40 CFR 761.125 for a detailed description of final numerical cleanup standards.

  (3) Contaminated soil must be excavated to 10 ppm PCBs provided the soil is excavated to a minimum depth of 10 inches. The excavated soil must be replaced with clean soil less than 1 ppm PCBs and the site restored to its original configuration.

Q13: Does a "high-concentration" or "large, low-concentration" spill in a nonrestricted access area always require excavating the contaminated soil to a minimum depth of 10 inches?

A13: No. Excavation of the soil may be terminated before reaching a 10-inch depth provided there are no detectible PCBs at the level of termination (i.e., less than 1 ppm). In other words, excavation must continue until: (1) there are no detectible PCBs at the level of termination, or (2) there is not greater than 10 ppm contamination at a minimum 10-inch depth, or (3) excavation must continue beyond 10-inch depth

if necessary to achieve the minimum 10 ppm cleanup standard.

Q14: Is there a minimum quantity level for required cleanup of a "high-concentration" PCB spill?

A14: No. High-concentration spills (500 ppm or greater) must be cleaned up in accordance with the PCB Spill Cleanup Policy regardless of the quantity spilled. Even spills from small, unregulated items such as PCB small capacitors are

considered improper disposal and should be cleaned up in accordance with the spill policy.

Q15: Is there a time limit on the final cleanup of "large, low-concentration" and "high-concentration" spills?

A15: Although the spill policy requires certain "immediate" actions, as described above, EPA has not placed a time limit on completion of cleanup since the time required will vary from case to case. However, EPA expects cleanup to be achieved promptly in all cases and will consider the promptness of completion in determining whether a responsible party made good faith efforts to clean up in accordance with the policy.

- **RECORDKEEPING REQUIREMENTS:**

  At the completion of cleanup of a large, low-concentration or high-concentration spill, the responsible party or appropriate agent must document the cleanup with records of decontamination. These records must be maintained for a period of 5 years. The records must include the following:

  (1) The source of the spill (e.g., type of equipment).
  (2) The date and time the spill occurred (actual or estimated).
  (3) The date and time cleanup was completed or terminated.
  (4) The nature and duration of any delayed cleanup.
  (5) A brief description of the spill location.
  (6) Precleanup sampling data used to determine spill boundaries if there were insufficient visible traces.

(7) A brief description of any solid surfaces cleaned.
(8) The approximate depth of soil excavation and the amount of soil removed.
(9) Postcleanup verification sampling data (test results).

- **SAMPLING/TESTING REQUIREMENTS:**

  Under the PCB spill policy requirements for large, low-concentration and high-concentration spills, responsible parties are required to conduct post-cleanup sampling to verify the level of cleanup. The responsible party, or designated agent, may use any statistically valid, reproducible, sampling scheme (either random samples or grid samples), provided the following requirements are satisfied:

  (1) The sampling area is the greater of: (a) an area equal to the area cleaned plus an additional 1-foot boundary, or (b) an area 20 percent larger than the original area of contamination.
  (2) The sampling scheme must ensure 95 percent confidence against false positives.
  (3) The number of samples must be sufficient to ensure that areas of contamination of a radius of 2 feet or more within the sampling area will be detected, except that the minimum number of samples is 3 and the maximum number of samples is 40.
  (4) The sampling scheme must include calculation for expected variability due to analytical error.

EXCLUDED SPILLS

As discussed earlier, certain PCB spills which occur in areas of higher potential risk and exposure to humans are specifically excluded from the spill policy. For each of the following spill situations, the responsible party must contact the appropriate Regional EPA Office of Pesticides and Toxic Substances (see page xiv of this document) within 24 hours of discovery of the spill. The EPA Regional Office will establish cleanup standards and requirements for the "excluded" spills on a case-by-case basis. The following

six spill situations are "excluded spills" and are not included in the cleanup, recordkeeping, and sampling requirements of the PCB Spill Cleanup Policy. They are subject, however, to all the measures in the policy that minimize further environmental contamination.

- Spills that result in the direct contamination of surface waters.
- Spills that result in the direct contamination of sewers or sewage treatment plants.
- Spills that result in the direct contamination of any private or public drinking water sources or distribution systems.
- Spills which migrate to and contaminate surface waters, sewers, or drinking water supplies before cleanup has been completed in accordance with the policy.
- Spills that contaminate animal grazing lands.
- Spills that contaminate vegetable gardens.

Q16: Are commercial farming crop lands included in the definition of "vegetable gardens"? Also, are residential gardens included in the definition?

A16: Generally yes. EPA performed some preliminary analysis of the risks posed by the consumption of vegetables grown on a spill area cleaned to 25 ppm PCBs in the case of farmland and 10 ppm in the case of residential gardens. Assuming that vegetables grown on a residential garden or farm are the entire vegetable diet of the site residents, cleaning soil to the levels in the policy may not be adequate. Also, EPA has concluded that vegetables are more likely to become contaminated through contact with contaminated dirt rather than plant uptake, especially root crops such as carrots and potatoes.

CHAPTER XV

RECORDKEEPING AND REPORTING

- RECORDKEEPING AND REPORTING -

EPA finalized specific recordkeeping and reporting regulations with the promulgation of the "PCB Ban Rule" in 1979. These regulations outlined the various records and reports which owners, storers, and disposers of PCBs and PCB Items were required to develop and maintain. The Notification and Manifesting Rule, published on December 21, 1989 (54 FR 52716) changed the format of the recordkeeping requirements for PCBs that were in place since 1979. Year after year, "improper recordkeeping" continues to be the single most frequent area of noncompliance in each of the ten EPA regions across the country. The following is a brief overview of the recordkeeping and reporting requirements for PCBs and PCB Items. One should pay particular attention to the changes as a result of the Notification and Manifesting Rule. Responsible parties are encouraged to refer to 40 CFR 761.180 and the Notification and Manifesting Rule for a detailed outline of the "Records and Reports" regulations.

The Notification and Manifesting Rule adopts additional recordkeeping and reporting requirements to complete the tracking system for PCB wastes. The rule requires that the manifests themselves be retained as records by waste handlers, and it requires reporting to EPA in the event of irregularities in the transport of regulated wastes. These reports depend largely on information derived from particular manifests.

Three of the waste tracking reports are modeled after their RCRA counterparts. The rule requires "Exception Reports" to be filed with EPA whenever a generator has not received verification of delivery within 45 days. Also, a "Discrepancy Report" is required of storage or disposal facilities in those cases where the waste actually delivered to them does not correspond exactly with the types and quantities described on the manifest. Third, an "Unmanifested Waste Report" is required of disposers or storers in those instances in which waste arrives at a facility unaccompanied by a required manifest.

The rule adds one additional reporting requirement for which there is no counterpart under RCRA. This requirement is the "One-year Exception Report," intended to bolster EPA's ability to enforce the requirement under TSCA regulations that limits storage of PCBs prior to disposal to no more

than one year. Information on when items of PCB waste were removed from use is included with the manifests that accompany the waste from generation to disposal. Disposers are required to certify to the date of disposal of PCB waste manifested to them, and in the event more than one year has elapsed since the PCBs were removed from use, a report must be filed with EPA.

Finally, the rule adds several amendments to the existing PCB recordkeeping provisions that concern the Annual Document requirements for the users, storers, and disposers of PCBs. The most significant of these amendments is the requirement that each disposer and commercial storer of PCB waste submit on July 15 of each year an "Annual Report," which is a summary of the previous calendar year's PCB activity at the facility. The report will be submitted to the appropriate EPA Regional Administrator.

40 CFR 761.180(a): PCBs and PCB Items In-Service or Projected for Disposal

Beginning February 5, 1990, each owner or operator of a facility, other than a commercial storer or disposer of PCB waste, using or storing at one time any of the following quantities of PCBs and/or PCB Items is required to develop and maintain Annual Records and by July 1 prepare an Annual Document Log on the disposition PCBs and PCB Items. The quantity limits are:

- 45 kilograms (99.4 pounds) or more of PCBs (50 ppm or greater) contained in PCB Containers, or
- one or more PCB Transformers (500 ppm or greater), or
- 50 or more PCB large, high- or low-voltage capacitors.

If any of these three quantity limits is met or exceeded, the owner or operator of the facility must maintain "Annual Records" for the PCBs and PCB Items, as well as develop and prepare an "Annual Document Log" each calendar year until the facility ceases using, storing, or disposing of PCBs and PCB Items. "Annual Records" and "Annual Document Logs" must be maintained for at least 3 years after that time.

The Annual Records include the following:

- All signed manifests generated by the facility during the calendar year.

- All Certificates of Disposal received at the facility during the calendar year.

An Annual Document Log is the summary of the detailed information maintained at the facility on its waste handling activities, including:

- The identity of the facility and the year covered by the Annual Document Log.

- The unique manifest number of every manifest generated by the facility during the calendar year and from each manifest and for unmanifested waste that may be stored at the facility, the following information:

    - Weight in kilograms for bulk PCB waste (e.g., in a tanker or truck), the first date it was removed from service for disposal, date it was placed into transport for off-site storage or disposal, and the date of disposal if known.

    - The serial number or other means of identifying each PCB Article, the weight in kilograms of the PCB waste in each PCB Article, the date removed from service for disposal, the date placed in transport for off-site storage or disposal, and the date of disposal if known.

    - The unique number identifying each PCB Container, a description and total weight in kilograms of the contents of the container, the first date material was placed into the container for disposal, the date each container was placed in transport for storage or disposal, and the date of disposal if known.

    - The unique number identifying each PCB Article Container, a description and total weight in kilograms of the contents of the

PCB Article Container, the first date a PCB Article was placed into the container 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.

- The total number by specific type of PCB Articles and the total weight in kilograms of PCBs in PCB Articles, the total number of PCB Article Containers and total weight in kilograms of the contents of the PCB Article Containers, the total number of PCB Containers and the total weight in kilograms of the contents of the PCB Containers, and the total weight in kilograms of bulk PCB

  waste that was placed into storage for disposal or disposed during the calendar year.

- The total number of PCB Transformers and total weight in kilograms of the PCBs contained in the transformer remaining in-service at the end of the calendar year.

- The total number of Large, High- or Low-Voltage PCB Capacitors remaining in-service at the end of the calendar year.

- The total weight in kilograms of any PCBs and PCB Items in PCB Containers, including the identification of container contents, remaining in-service at the facility at the end of the calendar year.

- Weights in kilograms, number and description of any PCBs or PCB Item shipped from or shipped to another facility owned or operated by the same generator.

- A record of each telephone call or other means of verification agreed upon by both parties to each designated commercial storer or designated disposer to confirm receipt of PCB waste transported by an independent transporter, as required by § 761.208.

NOTE: Readers are requested to closely review 761.180(a)(2) for the detailed information

required in this Annual Document Log.

Q1: Are the Annual Records and Annual Document Logs as specified at § 761.180(a)(1) and (2), required to be sent in to EPA?

A1: No. Unless specifically requested, a facility's PCB records should be maintained in-house and made available for inspection by authorized EPA personnel. [The Annual Report as specified at § 761.180(b) (which is discussed in the next section) is the only recordkeeping document that need be sent to EPA.]

Q2: Is a facility required to obtain a "Certificate of Disposal" for each shipment of PCBs for disposal?

A2: "Certificates of Disposal" are industry-developed documents normally used by PCB brokers and disposal companies to assure their customers that final disposal has, in fact, taken place. Under §761.218 owners and operators of disposal facilities are now required to prepare a Certificate of Disposal for PCB waste. The generator of the waste (i.e., either the original generator or the owner/operator of a storage facility that has co-mingled PCB wastes) would be required to maintain signed Certificates of Disposal.

Q3: Is an Annual Document Log and Annual Record supposed to report activity from July 1 of the preceding year to June 30 of the year the records are developed?

A3: No. An Annual Document Log and Annual Record should cover activity which took place the previous <u>calendar</u> year (January 1 - December 31). The regulations allow a 6-month period to July 1 to develop and complete the Annual Document Log and Annual Record. **NOTE:** For 1989 the documents shall cover the period from January 1, 1989 to February 5, 1990 (the effective date of the Notification and Manifesting Rule). For 1990 the documents shall cover the period from February 6, 1990 to December 31, 1990.

Q4: Our facility is past due on several years of Annual Documents [**NOTE:** "Annual Documents" is the term used to describe the records and reports that were to be developed and kept at the facility before the Records and Monitoring section (761.180) of the regulations was amended in the Notification and Manifesting rule.] Is it illegal to go back now and develop these required reports?

A4: If a facility has accurate past records and information, it is advisable to prepare all required Annual Documents, even those that are currently delinquent. A facility compiling such reports may receive an EPA penalty for completing Annual Documents after the allowed 6-month period. Penalties will be assessed for those who do not file these reports.

Q5: What exactly does the term "removed from service" mean?

A5: "Removed from service," when used in the context of the PCB regulations, specifically refers to the designation of a PCB Item for the end of its useful life or, in other words, "date of removal from service for disposal." Unfortunately, the term "removed from service," as used in the regulations, has often been misinterpreted by those in the regulated community. This is particularly so in the case of electric utilities where the term has been used for years in conjunction with a transformer or other piece of electrical equipment being "changed out" and/or "brought in from the field." Many times these types of "change outs" involve electrical equipment that is in sound functional condition (intact and nonleaking) and is simply placed back into "stock" (storage for reuse) to be reused on an as-needed basis. In other instances, equipment is "changed-out" when it is in need of and will receive repair work before going back into "stock" for future use. In either case, this is not what EPA means when by "removed from service." On the other hand, electrical equipment which is legally stored for reuse, or stored for repair by authorized servicing, is just as much "remaining in service" as a unit in the field operating under loaded conditions. In fact, once a PCB Item (50 ppm or greater) has been "removed from service for disposal," EPA does not allow that unit to be placed back into service, repaired, rebuilt, or sold for reuse. In addition, the one year storage for disposal requirement begins on the date of removal from service for disposal.

Q7: If I drain a PCB-Contaminated Transformer (50 - 499 ppm PCBs) prior to shipment for disposal, must I prepare an annual document?

A7: If the total weight of the liquid drained into the container(s) is 45 kgs. (99.4 lbs.) or more you must prepare an annual document for the PCB Container(s). If you are shipping only the drained transformer carcass you need not prepare an annual document.

40 CFR 761.180(b): Disposers and Commercial Storers of PCB Waste

Beginning February 5, 1990, each owner or operator of a facility (including high efficiency boiler operations) used for the commercial storage or disposal of PCBs and PCB Items is required to prepare and maintain an Annual Record on the disposition of all PCBs and PCB Items at the facility and prepare and maintain a written Annual Document Log for PCBs and PCB Items by July 1 that were handled as PCB waste at the facility during the previous calendar year. In addition, by July 15, the owner or operator of the facility must submit to the appropriate EPA Regional Administrator an "Annual Report" which is a brief summary of the information included in the Annual Document Log. (See § 761.180(b)(3) for further detail.) **NOTE:** For 1989 the documents shall cover the period from January 1, 1989 to February 5, 1990 (the effective date of the Notification and Manifesting Rule). For 1990 the documents shall cover the period from February 6, 1990 to December 31, 1990.

The Annual Records include the following:

- All signed manifests generated or received at the facility during the calendar year.
- All Certificates of Disposal that have been generated or received by the facility during the calendar year.

The written Annual Document Log includes the following: [Readers are requested to closely review § 761.180(b)(2) for the detailed information required in this Annual Document Log.]

- The name, address, and EPA identification number of the storage or disposal facility covered by the annual document log and the calendar year covered by the annual document log.
- For each manifest generated or received by the facility during the calendar year, the unique manifest number and the name and address of the facility that generated the manifest the following information:

- The date when any PCBs and PCB Items were disposed of at the facility or transferred to another disposal or storage facility, including the identification of the specific types of PCBs and PCB Items that were stored or disposed of.

- A summary of the total weight in kilograms of PCBs and PCB Articles in containers and the total weight of PCBs contained in PCB Transformers that have been handled at the facility during the previous calendar year. This summary shall provide totals of the above PCBs and PCB Items which have been: (1) received during the year; (2) transferred to other facilities during the year; and (3) retained at the facility at the end of the year.

- The contents of PCB Containers shall be identified. When PCB Containers and PCBs contained in a transformer are transferred to other storage or disposal facilities, the identification of the facility to which such PCBs and PCB Items were transferred shall be included in the document.

- The total number of any PCB Articles or PCB Equipment not in PCB Containers received during the calendar year, transferred to other storage or disposal facilities during the calendar year, or remaining on the facility site at the end of the calendar year shall be included.

- The identification of the specific types of PCB Articles and PCB Equipment received, transferred, or remaining on the facility site shall be indicated.

- When PCB Articles and PCB Equipment are transferred to other storage or disposal facilities, the identification of the facility to which the PCB Articles and PCB Equipment were transferred must be included.

Q7: Do the above requirements for a PCB storage facility apply to an electric utility which has set up a PCB storage

facility for their own PCBs and PCB Items?

A7: No. An electric utility which has set up a PCB storage facility for their own PCBs and PCB Items is only required to prepare a document under the criteria outlined for owners and users of PCBs at 761.180(a). The recordkeeping requirements for disposal and storage facilities outlined under 761.180(b) do not apply to electric utilities or others who are simply storing their own PCBs. They are not commercial storers of PCB waste.

The above documents must be completed for each calendar year until the facility is no longer used for the storage or disposal of PCBs and PCB Items. All documents that are required to be maintained at the facility must be maintained for at least 3 years after that time; except in the case of chemical waste landfills. These documents must be maintained at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items.

Other PCB Records: In addition to "Annual Records" and "Annual Documents," owners or operators of facilities using or storing PCBs and PCB Items are required to maintain the following records and reports when applicable:

- PCB Transformer Inspections (Quarterly and/or Yearly)
- PCB Transformer Registrations (Fire Departments and Building Owners)
- PCB Container/Drum/Bulk Tank Identification Logs
- PCB Spill Reports (See "PCB Spill Cleanup Policy")
- Spill Prevention Control and Countermeasure (SPCC) Plans for Storage of Large Tanks
- PCB Test/Sampling Data (See "PCB Spill Cleanup Policy")
- Data on PCB Transformers installed for either emergency or reclassification purposes

INCINERATION FACILITIES

In addition to the required documents which must be prepared by all PCB disposal facilities, each owner or operator of a PCB incinerator facility shall also collect and maintain the following information:

- When PCBs are being incinerated, the following continuous and short-interval data:

  (1) the rate and quantity of PCBs fed to the combustion system as required in 761.70(a)(3);

  (2) the temperature of the combustion process as required in 761.70(a)(4); and

  (3) the stack emission product to include O_2, CO, and CO_2 as required in 761.70(a)(7).

- When PCBs are being incinerated, data and records on the monitoring of stack emissions as required in 761.70(a)(7).

- 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 during the calendar year.

- The total weight in kilograms of any solid residues remaining on the facility site.

- When PCBs and PCB Items are being incinerated, additional periodic data shall be collected and

  maintained as specified by the Regional Administrator pursuant to 761.70(d)(4).

- Upon any suspension of the operation of any incinerator pursuant to 761.70(a)(8), the owner or operator of such an incinerator shall prepare a document. This document shall, at a minimum, include the date and time of the suspension and an explanation of the circumstances causing the suspension of operation. The document shall be sent to the appropriate Regional Administrator within 30 days of any such suspension.

PCB incinerator facilities must collect and maintain the above information for a period of at least 3 years from the date the information was collected.

CHEMICAL WASTE LANDFILL FACILITIES

In addition to the required documents which must be prepared by all PCB disposal facilities, each owner or operator of a chemical waste landfill facility shall also collect and maintain the following information:

- Any water analysis obtained in compliance with 761.75(b)(6)(iii); and
- Any operations records including burial coordinates of wastes obtained in compliance with 761.75(b)(8)(ii).

Chemical waste landfill facilities must collect and maintain the above information until at least 20 years after the chemical waste landfill is no longer used for the disposal of PCBs and PCB Items.

HIGH EFFICIENCY BOILER FACILITIES

In addition to the required documents which must be prepared by all PCB disposal facilities, each owner or operator of a high efficiency boiler used for the disposal of liquids containing between 50 and 500 ppm PCBs shall also collect and maintain the following information:

- For each month PCBs are burned in the boiler, the carbon monoxide and excess oxygen data required in 761.60(a)(2)(iii)(A)*(8)* and 761.60(a)(3)(iii)(A)*(8)*.
- The quantity of PCBs burned each month as required in 761.60(a)(2)(iii)(A)*(7)* and 761.60(a)(3)(iii)(A)*(7)*.
- For each month PCBs (other than mineral oil dielectric fluid) are burned, the chemical analysis data of the waste as required in 761.60(a)(3)(iii)(B)*(6)*.

High efficiency boiler facilities used for the disposal of liquids containing between 50 and 500 ppm PCBs must collect and maintain the above information for a period of at least 3 years from the date the information was collected.

SPECIAL RECORDKEEPING REQUIREMENTS

In addition to the documents and other records outlined in Units II through V above, each owner or operator of a PCB storage or disposal facility (including high efficiency boiler operations) shall collect and maintain the following information:

- 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.

- All documents, correspondence, and data that have been provided by the owner or operator of the facility to any state or local government agency and that pertain to the storage or disposal of PCBs and PCB Items at the facility.

- 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, or other permits or authorizations such as those required by 761.70(d) and 761.75(c).

Each owner or operator of a PCB storage or disposal facility must collect and maintain these special records for a period of at least 3 years after the facility is no longer used for the storage or disposal of PCBs and PCB Items except that in the case of chemical waste landfills, the special records must be maintained at least 20 years after the landfill is no longer used for the disposal of PCBs and PCB Items.

CHAPTER XVI

PCB TESTING PROCEDURES

- PCB TESTING PROCEDURES -

OIL-FILLED ELECTRICAL EQUIPMENT

The PCB regulations under TSCA do not require electrical equipment containing mineral oil dielectric fluid to be tested for PCB contamination. Instead, EPA allows the continued use and storage for reuse of untested mineral oil electrical equipment provided the equipment is intact and nonleaking, and provided the equipment is used in compliance with all applicable "assumption" requirements. However, owners or operators of mineral oil dielectric fluid electrical equipment may use the following procedures to determine the concentration of PCBs in the dielectric fluid:

- Mineral oil dielectric fluid removed from electrical equipment may be collected in a common container, provided that no other chemical substances or mixtures are added to the container. This common container option does not permit dilution of the collected oil. Mineral oil that is assumed or known to contain 50-ppm PCBs or greater must not be mixed with mineral oil that is known or assumed to contain less than 50-ppm PCBs to reduce the concentration of PCBs in the common container. If dielectric fluid from untested oil-filled circuit breakers, reclosers, or cable is collected in a common container with dielectric fluid from other oil-filled electrical equipment, the entire contents of the container must be treated as PCBs at a concentration of at least 50 ppm.

- For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common containers or the individual electrical equipment to determine PCB concentration. Except, that if any PCBs at a concentration of 500 ppm or greater have been added to the container or equipment, then the total contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements at 761.60. Representative samples are either samples taken in accordance with the American Society of Testing and Materials (ASTM) method D-923, or 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.

Q1: Can a facility utilize "screen tests" to prove that mineral oil dielectric fluid electrical equipment is not contaminated with PCBs?

A1: EPA currently finds gas chromatography (GC) to be the minimally acceptable method for determining the concentration and nature of PCBs in oils and uses GC for verification purposes. EPA neither requires nor prohibits use of any particular test method to determine PCB concentration or total chloride ion detection methods. Total organic chlorine or chloride analysis is not as specific as gas chromatography for determination of PCB content (i.e., it cannot distinguish between PCBs and other chlorine containing compounds). Since PCB-Containing Materials frequently contain organic chlorine from sources other than PCBs (e.g., trichlorobenzenes), test data obtained by total chlorine or chloride analysis are not as reliable for PCB quantitation as gas chromatography. Therefore, EPA will not accept total chlorine analysis data as proof that a company has satisfied any of the testing requirements, or achieved any of the concentration levels found in the PCB regulations. There is no prohibition on the use of total organic chlorine or chloride analysis as a rough field screening device to determine whether further testing is needed. However, the Agency finds gas chromatography to be the minimally acceptable method for ascertaining the level of PCBs in oils.

WASTE OIL

Owners or users of waste oil may use the following procedures to determine the PCB concentration of waste oil:

- 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.

- For purposes of complying with the marking and disposal requirements, representative samples may be taken from either the common container or individual containers to determine the PCB concentration. Except, if any PCBs at a

concentration of 500 ppm or greater have been added to the container, then the total container contents must be considered as having a PCB concentration of 500 ppm or greater for purposes of complying with the disposal requirements at 761.60. Representative samples are either samples taken in accordance with the American Society of Testing and Materials (ASTM) method D-923, or 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.

PCB SPILLS

See the chapter XIV on "PCB Spill Cleanup Policy" for a detailed discussion of proper sampling/testing methods for PCB spills.

CHAPTER XVII

IMPORT AND EXPORT

- IMPORT AND EXPORT -

CLOSED BORDER POLICY

EPA has generally established a "closed border" policy which went into effect May 1, 1980, pertaining to the importing and exporting of PCBs and PCB Items. In the Federal Register of May 31, 1979, EPA recognized that PCB contamination is a global problem, and that PCBs used outside the United States can cause PCB contamination of this country due to the extreme persistence of the substance and the ease with which it is transported in the environment. Consequently, the Agency concluded in 1979 that the distribution in commerce of PCBs for export constitutes an unreasonable risk to health and the environment in the United States. However, certain activities involving the import and export of PCBs have been specifically exempted from the regulatory prohibitions on distribution in commerce (import and export) of PCBs.

EXEMPTIONS TO CLOSED BORDER POLICY

These exemptions are:

- Persons who import or export products containing PCBs generated as unintentional impurities in "excluded manufacturing processes" as defined in 761.3, are exempt from the distribution in commerce prohibitions provided that such persons comply with the records and certification requirements at 761.185, 761.187, and 761.193.

- Persons who import or export products containing "recycled PCBs" as defined in 761.3, are exempt from the distribution in commerce prohibitions provided that such persons comply with the records and certification requirements at 761.185, 761.187, and 761.193.

- Persons who import or export products containing "Excluded PCB Products" as defined in 761.3 are exempt from the distribution in commerce prohibitions.

- Persons who import or export products that were contaminated with PCBs because of a spill from, or proximity to, a PCB Item 50 ppm or greater, and

which have been decontaminated in accordance with applicable EPA spill cleanup policies, are exempt from the distribution in commerce prohibitions.

- PCBs at concentrations less than 50 ppm may be imported or exported for purposes of disposal (761.20(b)(2)).

- PCBs at any concentration may be exported for reuse provided they were sold for purposes other than resale prior to July 1, 1979 and are in a totally enclosed manner.

Q1: Can PCB samples be imported for purposes of analysis?

A1: No, not without an exemption. Since TSCA defines import as manufacture (TSCA section 3), and the manufacture of PCBs is banned unless exempted by rule (TSCA section 6(e)), a person may not import PCBs other than at less than 50 ppm for purposes of disposal.

CHAPTER XVIII

PCB TRANSFORMER FIRE-RELATED REQUIREMENTS

- PCB TRANSFORMER FIRE-RELATED REQUIREMENTS -

In the August 25, 1982 "Electrical Equipment Use Rule," EPA authorized the continued use of all nonrailroad transformers containing or contaminated with PCBs for the remainder of their useful lives. The only exceptions were PCB Transformers (500 ppm or greater) whose use was prohibited after October 1, 1985 if they posed an exposure risk to food or feed. In making its August 1982 decision, EPA determined that authorizing the use of transformers containing PCBs for the remainder of their useful lives did not present an unreasonable risk to public health or the environment. In evaluating the risks posed by the continued use of transformers containing PCBs, EPA considered the principal route of release and exposure to PCBs to result from leaks and spills from this equipment. However, since that time, EPA has learned that fires involving transformers can also be significantly responsible for the release of PCBs, and that PCBs released from transformers in a fire situation can be volatilized and converted into dioxins and dibenzofurans which are many times more toxic than PCBs.

Originally, EPA believed that PCB Transformer fires were very rare and isolated events. Thus, EPA did not directly consider the public health and environmental risk posed by fire-related events until after the 1982 "Electrical Equipment Use Rule" when additional information came to EPA's attention indicating that PCB Transformer fires may occur more frequently than previously expected, and that transformer fire-related hazards are not restricted solely to transformers located inside buildings.

In an attempt to reduce fire-related risks posed by the use of PCB Transformers, EPA issued a final rule published in the Federal Register of July 17, 1985 (50 FR 29170) which is referred to as the "PCB Transformer Fires Rule." In addition to the existing use and servicing regulations for PCB Transformers, this 1985 rule further regulated the use of PCB Transformers. Among other provisions, the rule specifically:

- prohibited the use of higher secondary voltage (secondary voltages equal to or greater than 480 volts including 480/277 volt systems) network PCB Transformers, located in or near a commercial building, after October 1, 1990;

- prohibited the further installation of PCB Transformers in or near a commercial building;

- required, as of October 1, 1990, the enhanced electrical protection of all radial and lower secondary voltage (secondary voltages below 480 volts) network PCB Transformers, located in or near a commercial building;

- required the registration of all PCB Transformers with the Fire Department having primary jurisdiction by December 1, 1985;

- required the registration of any PCB Transformers located within 30 meters (roughly 100 feet) of a commercial building to be registered with the building owner;

- required the marking of the means of access (vault door, fence, hallway, etc.) to a PCB Transformer with the mark M_L (PCB label);

- required the removal of all combustible materials stored within 5 meters (roughly 15 feet) of a PCB Transformer; and

- required immediate notification of the National Response Center (NRC) in the event of a PCB Transformer fire-related incident.

Shortly after the promulgation of the 1985 "PCB Transformer Fires Rule," Mississippi Power Company filed a petition for review of the rule. After reviewing new information submitted by Mississippi Power and others, and considering their requests for clarification and amendments to the "PCB Transformer Fires Rule," EPA determined that the issues raised warranted further Agency consideration and subsequently, in the Federal Register of December 31, 1986 (51 FR 47241), published a document responding to issues that needed clarification and in the Federal Register of July 19, 1988, EPA promulgated final amendments to the original 1985 "PCB Transformer Fires Rule." These amendments included:

- **INSTALLATION OF PCB TRANSFORMERS:**

  The "PCB Transformer Fires Rule" banned the installation of PCB Transformers in or near

commercial buildings after October 1, 1985. EPA has amended the 1985 rule to allow the installation of a PCB Transformer under "emergency situations" as described in 761.30(a)(1)(iii)(B); and, installation for purposes of reclassification as described in 761.30(a)(1)(iii)(C).

- **ENHANCED ELECTRICAL PROTECTION:**

  The "PCB Transformer Fires Rule" required the installation of enhanced electrical protection on all radial and lower secondary voltage network PCB Transformers, located in or near a commercial building, by October 1, 1990. On July 19, 1988 (53 FR 27322) EPA amended the 1985 rule by allowing the use of nonsidewalk vault, lower secondary voltage network PCB Transformers in or near commercial buildings without enhanced electrical protection until October 1, 1993, provided EPA is notified as of October 1, 1990. These PCB Transformers must then be removed by October 1, 1993.

  On November 26, 1990 (55 FR 49043) EPA further amended the PCB Transformer Fires rule by allowing for partial deenergization, i.e., deenergizing only the faulted phase(s), of certain low voltage radial transformers. In some circumstances this may be equivalent to total deenergization of such transformers in the event of a high current fault. See "History of the PCB Regulations" earlier in this manual for greater discussion on this issue.

- **PHASEOUT OF LOWER SECONDARY VOLTAGE NETWORK PCB TRANSFORMERS IN SIDEWALK VAULTS:**

  The 1985 fires rule prohibited the use of all network PCB Transformers with higher secondary voltages, in or near a commercial building, after October 1, 1990. EPA added to this original phaseout requirement in the 1988 final amendments by also requiring that all lower secondary voltage network PCB Transformers, located in sidewalk vaults, be removed from service by October 1, 1993.

- **DISCOVERY OF A PCB TRANSFORMER:**

In the event a mineral oil transformer, assumed to contain less than 500-ppm PCBs as provided in 761.3, is tested and found to be contaminated at 500 ppm or greater, it will be subject to all of the requirements for "PCB Transformers." In addition, efforts must be initiated immediately to bring the transformer into compliance. The following is a partial listing of compliance requirements for newly discovered PCB Transformers:

(1) Mark/label the PCB Transformer within 7 days after discovery.
(2) Mark/label the means of access to the PCB Transformer within 7 days after discovery.
(3) Register the PCB Transformer with fire response personnel and with the commercial building owner (if within 30 meters), within 30 days of discovery.

NOTE: Responsible parties should refer to 40 CFR 761.30 for detailed requirements.

Q1: Are single family residential homes considered "commercial buildings"?

A1: Commercial buildings are described in the regulations as including residential properties. However, in promulgating the 1985 fires rule, EPA was concerned with residential properties where groups of people live and reside (e.g., apartments, hotels, dormitories). Consequently, EPA is clarifying that the term "residential properties" as used in the definition of "commercial building" does not include single family residential homes.

Q2: Is it allowable to send PCB Transformer registration letters to building managers instead of the owners if there are multiple owners?

A2: Yes. Registration of PCB Transformers with the property manager is acceptable when there are multiple owners (e.g., condominiums).

Q3: Could you please clarify the term "combustible materials" and their prohibited storage within "5 meters" of a PCB Transformer as referenced in the PCB Transformer Fires Rule?

A3: Although EPA did not specifically define "combustible materials," examples were set forth in the regulation to help in understanding what EPA meant by "combustible material." (See 50 FR 29200.) These combustible materials include, but are not limited to, paints, solvents, plastics, paper, and sawn wood. EPA's intent in promulgating this rule was to prevent the storage of materials near a PCB Transformer that would start or feed a fire.

The regulation, at 50 FR 29200, specifically requires that combustible material not be stored within a PCB Transformer enclosure, or within 5 meters of a transformer enclosure, or if unenclosed (unpartitioned), within 5 meters of a PCB Transformer. Wood walls, platforms, and other integral building structures, even if considered combustible, do not constitute "stored" materials. Any item "in use" cannot be considered a stored item within the purview of the rule. EPA's intent in promulgating this requirement was to reduce the risk of fire by mandating that combustible materials stored near transformers be moved to other locations. Wood walls, platforms, and other integral building structures, if they are not "stored" items, do not fall within the purview of the stored combustible rule.

The 5-meter distance requirement does not apply where combustible materials are in a storage room adjacent to a PCB Transformer vault if the common wall between the storage room and vault is constructed in a manner which would effectively reduce the risk of the stored combustible starting or feeding a fire. The purpose of the "5-meter requirement" is to provide an adequate distance between a PCB Transformer and stored combustible materials, thus reducing the potential for these materials to ignite in the event of an electrical fault or transformer fire, or prevent a fire external to the transformer from involving the transformer. EPA recognizes that equivalent levels of protection can be provided by other means including separating a PCB Transformer from stored combustibles by a barrier or enclosure that would contain a fire until it could be extinguished or until the transformer could be deenergized. Six-inch-thick reinforced concrete is a typical 3-hour fire-resistant construction, as specified in ASTM Standard E119-75; Fire Tests of Building Construction and Materials, NFPA 251-1972; and Methods of Fire Tests of Building Construction and Materials, ANSI A2.1-1972. For PCB Transformer fires, EPA believes that a 2- to 3-hour fire-rated wall or enclosure constructed of noncombustible materials, such as concrete, separating a PCB Transformer

from stored combustibles would present an adequate barrier to fire. If the wall can accomplish this purpose, the 5-meter rule does not apply.

The 5-meter distance requirement, although not specified in the regulation, applies not only to horizontal distances, but to vertical distances as well, unless the vertical distance is separated by a continuous, permanent ceiling or floor. EPA did not intend that a 5-meter distance be measured through separate and distinct rooms located above or below the transformer.

CHAPTER XIX

PCB NOTIFICATION AND MANIFESTING RULE

-PCB NOTIFICATION AND MANIFESTING RULE-

The general provisions of the PCB Notification and Manifesting Rule are outlined in this chapter as well as a number of common questions and answers that have been raised since the effective date of the rule (February 5, 1990). Readers should refer to the Federal Register of December 21, 1989 (54 FR 52716) for the specific provisions of the final rule. In addition, readers should be aware that there are many State programs which impose overlapping transportation, storage, or disposal requirements on the Federally regulated PCB disposal community. Compliance with Federal rules does not provide relief from compliance with State requirements. Conversely, compliance with State requirements does not provide relief from compliance with Federal rules

First, the rule adds to the TSCA disposal regulations a PCB waste tracking system modeled after the "cradle-to-grave" tracking system for hazardous wastes under RCRA. At the heart of the tracking system are the requirements that PCB waste handlers notify EPA of their PCB waste activities, and use the RCRA Uniform Manifest (Form 8700-22) in connection with their shipments of regulated PCB waste.

Second, the Rule requires all persons who commercially store PCB wastes to obtain an approval from their EPA Regional Administrators, or from the Director, Chemical Management Division (CMD)/Office of Pollution Prevention and Toxics (OPPT) (when they seek approval for commercial storage areas ancillary to disposal facilities that were approved by Headquarters). The approval process will enable EPA to evaluate the qualifications of applicants to engage in the business of PCB waste storage, and more particularly, to impose standards relating to closure plans, financial responsibility, and maximum storage capacity.

BACKGROUND

Congressional oversight committees have probed into several incidents which the committees believed demonstrated a need for additional controls to ensure that PCB waste is in fact

properly disposed of at permitted facilities. In particular, the House Subcommittee on Environment, Energy, and Natural Resources (Rep. Synar, Chairman) held hearings in August 1986, and again in April 1987, on PCB disposal incidents. The testimony elicited at these hearings highlighted the fact that the national PCB disposal program lacked a means of tracking PCB waste from the point of generation to the point of disposal at approved facilities. These proceedings also highlighted another shortcoming which the Subcommittee found to be especially troubling--the lack of any Agency oversight of the qualifications and activities of certain PCB waste brokers and others who act as intermediate storers of PCB waste generated by others. The Agency was criticized for not having a means of identifying definitively the intermediate handlers of PCB wastes, and for not having a means of evaluating the qualifications and financial responsibility of those who engage in these commercial activities.

TOPICS ADDRESSED BY THIS RULE

TRACKING SYSTEM FOR PCB WASTE

The rule adopts a tracking system for PCB waste modeled after the "cradle-to-grave" tracking system for RCRA hazardous wastes. Specifically, the tracking system consists of the following components:

- A requirement that certain PCB waste handlers notify EPA of their PCB waste activities, and receive from the Agency unique identification numbers;
- A requirement that generators of regulated PCB wastes initiate shipping documents (manifests), which physically track the waste from the point of generation to the site of storage and/or disposal; and
- Recordkeeping and reporting requirements that complete the tracking system and facilitate enforcement of the PCB disposal regulations.

NOTIFICATION REQUIREMENT: (40 CFR 761.202 and 205)

The notification requirement imposed on PCB waste handlers

is similar to that which EPA requires under the Resource Conservation and Recovery Act (RCRA) section 3010 for notification of hazardous waste activities. It is illegal to engage in PCB waste handling activities unless one has notified EPA in advance, and received a unique identification number. The persons who are required to notify EPA consist of generators, transporters, commercial storers, and disposers of PCB wastes. To maintain, as far as possible, consistency with existing RCRA requirements, the "Notification of PCB Activity" form is similar to the RCRA notification form. Importantly, PCB waste handlers who have previously notified and received identification numbers under RCRA do not need to obtain a new identification number from EPA under this rule, but they still must notify EPA in order to confirm the existing identification number. Identification numbers issued under this rule will be based upon the same 12-digit numbering system (DUNS) which RCRA uses to designate hazardous waste entities.

The rule differs slightly from RCRA in that it requires only a limited class of PCB waste generators to notify EPA and obtain unique identification numbers. The generator notifications are limited to the generator-owned or operated storage facilities that are subject to the TSCA storage facility standards (761.65(b) and/or (c)(7)) for PCB waste. The purpose in designating this class of facilities is to focus on those larger volume users, owners, and processors who store PCB waste which they generate and may be expected to utilize PCB disposal services on a fairly regular and/or large scale basis. For the generators exempted from notification, this rule specifies a generic identification number (40 CFR PART 761) for use on their manifests.

This rule treats notification by transporters and commercial storers and disposers of PCB waste like they would be treated under RCRA. All such facilities are required to notify and receive from EPA unique identification numbers as a condition of doing business.

Q1: Are transfer facilities required to notify EPA of their PCB waste handling activities?

A1: Transfer facilities may hold PCB waste for up to 10 consecutive days to provide trains, trucks and other transport vehicles the opportunity to unload or transfer the PCB waste to the next connecting transport vehicle. If the waste is held for more than 10 consecutive days, then the facility becomes a commercial storer subject to the notification requirements (§761.205), the storage area

requirements (§761.65(b)), and the requirements associated with obtaining commercial storage approval (§761.65(d)-(h)).

Q2: Does the EPA have to be notified when fluorescent light ballasts are removed from a building?

A2: No. If the business does not conduct any other PCB handling activities, they need not notify EPA under the PCB regulations, but you must notify the NRC pursuant to CERCLA if more than 1 lb. of PCBs is involved.

Q3: If we have an existing RCRA EPA identification number, do we need a different TSCA identification number?

A3: No. You may use your RCRA number but still must notify EPA under TSCA in order to confirm that number. EPA must confirm that number before you may commence any PCB waste handling activity.

MANIFESTING OF PCB WASTE: (40 CFR 761.207-211, 215 and 218)

The centerpiece of the tracking system for PCB waste is the requirement that all who handle regulated PCB wastes use shipping documents known as manifests to track the movement of PCB waste from the point of generation to the point of delivery to off-site storage or disposal facilities. The generator bears the primary burden of preparing the manifest, which at all times physically accompanies the waste to its destination.

Most importantly, the manifest establishes a paper trail of accountability that documents each waste handler's completion of his responsibilities with regard to the waste. Each person (generator, transporter, etc.) who handles the waste must obtain the signature of the next person in the chain of distribution, and he must keep a copy signed by the "next-in-line" handler in his files as a record of his involvement with the waste shipment. Finally, an additional copy signed by the storage or disposal facility designated on the manifest is returned to the generator who initiated the shipment, signifying the successful completion of the waste delivery transaction. In effect, the manifest serves notice of the types and quantities of waste being shipped; it creates a paper trail documenting that the waste was properly delivered; and it is a source of information for other records and reports that summarize a facility's overall waste activities.

EPA is requiring that the same manifest document used in connection with RCRA hazardous waste--the Uniform Manifest--be the shipping document for tracking PCB waste. The existing Uniform Manifest is designed to elicit basic information identifying the persons handling the waste, as well as the nature and quantity of the waste. This format lends itself well to the tracking of PCB waste.

The rule requires that manifests be used in connection with the off-site transport of PCB wastes at the 50 ppm or greater level (see 761.207(j) for a discussion of manifesting and anti-dilution). The 50 ppm threshold for manifesting matches the existing cut-off for the disposal of PCBs under the TSCA PCB regulations. The 50 ppm threshold also corresponds to the level at which a number of States require manifests under their hazardous waste programs, and it corresponds to the level at which disposers are currently requiring manifests as a means of limiting their liabilities.

Q4: When states require the use of a manifest for shipping PCB waste, which form should I use?

A4: If both the consignment state and the generator state require the use of a specific manifest for use in their state, the PCB rules require that the consignment state's manifest must be used. EPA suggests that both manifests be prepared, but only the consignment state's manifest be retained in the TSCA annual PCB records, when any state is unwilling to use a form of manifest used in another state.

Q5: Do I need to manifest drained PCB-Contaminated Transformers?

A5: No. Since drained PCB-Contaminated Transformers are not subject to the disposal requirements of Subpart D, 40 CFR Part 761, they are not subject to the manifesting requirements.

Q6: If a generator owns two storage facilities which have different EPA identification numbers and ships PCB waste from one facility to another for purposes of consolidation, must the waste be manifested?

A6: No. The PCB waste has not left the generator's control and, therefore, need not be manifested at this time.

Q7: I own a transformer service shop. Am I considered the generator of the residual oils that are collected during repair and servicing operations?

A7: Yes. You are the generator of this waste because you have physical control of the equipment when the oil was removed. If the residuals were generated on-site at the owner's facility, the owner would be the generator of this waste.

Q8: A transformer is shipped off-site for purposes of inspection and repair. It is determined by the repair shop that the cost of repair would exceed the cost of replacing the unit. The repair shop contacts the owner of the unit for instructions on how to proceed and is instructed by the owner to dispose of the unit. Who is the generator? If it is the repair shop, how would the transformer show up on the annual records of the original owner and how would the original owner ensure receipt of a Certificate of Disposal (CD)?

A8: The repair shop is the generator of the waste (i.e., transformer) because it "has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated and is subject to the disposal requirements,"(40 CFR 761.3 -- definition of "Generator of PCB Waste"). The day that the original owner made the decision to dispose of rather than repair the unit is the day the unit is considered to be "removed from service for disposal." This information is required to be recorded in the repair shop's annual document log as per 40 CFR 761.180(a)(2)(ii)(B). The original owner would not receive a CD because he was not the generator of the waste, but he could make arrangements with the repair shop to receive a copy of the CD when the repair shop gets its copy from the disposer. Likewise, the repair shop could not "return" the waste oil to the original owner unless that owner was a commercial storer or disposer who had notified the Agency of such activities.

Q9: In which of the following situations is a generator required to make a confirmation telephone call to the designated facility to confirm receipt of PCB waste?

a. The designated facility provides transportation services with vehicles owned and operated by them.

b. The designated facility provides transportation through a wholly-owned subsidiary.

c. Through a contract with the generator, the designated facility is responsible for the transportation and chooses an independent company.

A9: The only time a confirmation telephone call need be made is

when an "independent transporter" is used. Section 761.208(a)(4). Therefore, in situations "a" and "b" a confirmation call would not be needed and in situation "c" one would.

Q10: When completing the manifest form, can the weight in kilograms be entered in the space provided in item 14?

A10: Yes. The instructions for filling out the Uniform Hazardous Waste Manifest allow for the use of various units of measure; kilograms is one of those units. DOT currently has no rule that limits the unit of measure to only gallons or pounds.

Q11: Is it mandatory to use the waste codes "PCB 1" and "PCB 2" on the manifest?

A11: No. The use of these waste codes is intended to facilitate data exchange among cooperating states and is, therefore, optional.

Q12: (a) Can estimates for weight be used when facilities do not have scales to weigh drums? (b) If so, is the difference of more than 10 percent in weight still significant if the generator and the disposal firm have reached an agreement that the disposal firm's weighing will be the accepted figure?

A12: (a) Estimates may be used. The PCB regulations take into account that it is not always feasible to weigh the material. When it is not possible to weigh the material, it is acceptable either to weigh a 1 gallon sample or estimate the weight using 12 pounds per gallon of askarel and 8 pounds per gallon for contaminated mineral oil. You must indicate on the manifest whether the weight is actual or estimated. (b) There would be no need to submit a discrepancy report if a weight difference of greater than 10 percent can be reconciled, i.e., it is mutually agreed to use the disposal firm's scales.

Q13: Who is the generator in the following cases of shipped laboratory samples?

a. The laboratory ships the unused portion back to the person from whom it was originally received.

b. The person submitting the sample for analysis subsequently ships that sample for commercial storage

or disposal.

c. The sample is manifested by the lab to a disposal facility.

A13: Laboratory samples are implicitly authorized for use, as opposed to being under the disposal regulations, and are considered to remain in use until their use for analysis or for an enforcement case has ended. Therefore, in case "a" no one is the generator since no waste is being generated. In case "b" the sample is now subject to the disposal regulations since it is being shipped to a commercial storer or disposer. In this case then, the person shipping the sample for storage or disposal is the generator. In case "c" the sample is obviously no longer in use since the lab is manifesting it to the disposal facility; the lab is the generator.

RECORDS AND REPORTS: (40 CFR 761.180, 209, 210, 211, 215, and 218)

The rule adopts additional recordkeeping and reporting requirements to complete the tracking system for PCB wastes. The rule requires that the manifests themselves be retained as records by waste handlers (761.209), and it requires reporting to EPA in the event of irregularities in the transport of regulated wastes (761.210). In addition, there are reporting requirements for: unmanifested waste (761.211), exception reporting -- when the one-year storage for disposal requirement is breached (761.215), or a Certificate of Disposal is not received in a timely manner by the generator (761.218). These reports depend largely on information derived from particular manifests.

The rule adds several amendments to the existing PCB recordkeeping provisions that concern the annual document requirements for the users, storers, and disposers of PCBs. The most significant of these amendments is the requirement that each disposer and commercial storer of PCB waste submit by July 15 of each year an Annual Report, which is a summary of the previous calendar year's PCB activity at the facility. Section 761.180(b)(3). The report must be submitted to the appropriate EPA Regional Administrator. Chapter XV discusses the new recordkeeping provisions of the Notification and Manifesting Rule in greater detail.

Q14: As the ultimate disposer of manifested PCB waste, do I send the Certificate of Disposal to the generator or to the commercial storer from which I received the waste directly?

A14: The Certificate of Disposal must be sent to the generator indicated on the manifest. In the event the storer generates a new manifest because he consolidates a number of PCB waste shipments prior to sending the waste to the disposal facility, the original generator may make arrangements with the commercial storer to receive a copy of the Certificate of Disposal.

COMMERCIAL STORAGE APPROVALS: (40 CFR 761.65(d)-(j))

The rule adopts an approval process for commercial PCB waste storers. The term "commercial storer" is defined broadly to mean any facility that stores PCB wastes generated by others, or that brokers waste generated during electrical equipment servicing.

The rule allowed existing commercial storers a 180-day period from the effective date (February 5, 1990), within which they must have applied for approvals from their EPA Regional Administrators (or from the Director, CMD/OPPT for approval of commercial storage areas at disposal facilities approved by Headquarters). If a facility submitted a complete application (including but not limited to: identity of principals and key employees, a list of State and/or Federal environmental violations occurring over the past 5 years, description of the design and capacity of the facility, a closure plan, a demonstration of financial assurance, and a closure cost estimate) by August 4, 1990, the applicant was granted interim approval to operate until the facility's application was either approved or denied at which time interim authorization was terminated.

The issuance of a final storage approval is contingent upon the company satisfying the seven criteria in 40 CFR 761.65(d)(2). Among other things, the Regional Administrator must be satisfied that the applicant is qualified to engage in the commercial storage business. Also, applicants are required to submit acceptable closure plans and demonstrate their financial responsibility for closure. The requirement to demonstrate one's financial responsibility can be satisfied by using one or more of the financial assurance mechanisms described in current RCRA regulations for permitted hazardous waste facilities (40 CFR 264, Subpart H). Applicants will also be required to certify their compliance with the TSCA storage facility standards, and to estimate the maximum quantities of PCB waste that will be handled at the facility.

The final rule contains a small quantity exemption from the definition of "commercial storer" for facilities that store less than 500 gallons of PCBs at any time. Such facilities need not seek approvals to operate under 761.65(b). At the time of this printing, the Agency is considering proposing a similar small quantity exemption for solid PCB waste.

Q15: Does the small quantity exemption for applying for a commercial storage approval apply only to less than 500 gallons of liquid PCB waste?

A15: In the Federal Register of June 27, 1990, EPA clarified this exemption by stating that one need not apply for a commercial storage approval if the facility's storage of PCB waste at no time exceeds 500 liquid gallons of PCBs. Pending publication of a final amendment in the Federal Register, EPA will not bring enforcement actions against facilities storing less than 70 cubic feet of solid PCB waste, provided such facilities notify EPA of their waste activities and comply with all other TSCA and PCB regulations.

Q16: I operate the central PCB storage facility which is owned by and accepts waste from members of our public power association. Am I considered a commercial storer and therefore required to submit a commercial storage application?

A16: No. Storage of one company's PCB waste by a "related company" is not commercial storage. Therefore, storage between "related companies" is exempt from commercial storer status. Storage of any waste generated by a non-affiliated organization would change this status to that of a commercial storer. "Related companies" include a parent company and its subsidiaries, sibling companies owned by the same parent company, companies owned by a common holding company and members of an electric cooperative. The test is whether the "related" companies have a financial or managerial relationship that would provide for a mutual role in the financial assurance for the storage area. By this definition, companies are not related if they merely belong to the same trade association.

Q17: Would all Department of Defense (DOD) facilities be considered "related" under this rule?

A17: Yes. DOD facilities are considered related so there will be

no commercial storage involved when one DOD facility stores PCB waste that is generated by another DOD facility. However, storage of PCBs at a DOD facility generated by another Federal, State, or local government departments/agencies, or other (i.e., private) facilities will constitute commercial storage.

Q18: Are independent laboratories required to get commercial storage approval?

A18: No. As long as they are independent (i.e., separate from any firm whose activities involve PCB waste handling) and store their waste in an area that complies with 40 CFR 761.65(b)(i)-(iv), such facilities are not required to get commercial storage approvals.

Q19: A power marketing agency has contracts with its customers to operate and maintain equipment that the customer owns. The agency may operate a customer's equipment located either on the customer's property or the agency's property. Is the power marketing agency a commercial storer if it stores PCB waste owned by its customers?

A19: Yes. The power marketing agency is providing a service for a fee. That is not the same interwoven managerial or financial interest that exists between electrical cooperatives, sibling corporations, or other relationships where there would be a mutual role in financial assurance for the storage area.