MAINTENANCE TECHNICAL SUPPORT CENTER / MAINTENANCE MANAGEMENT OFFICE
ENGINEERING & TECHNICAL SUPPORT DEPARTMENT / OPERATIONS GROUP

maintenance bulletin

SUBJECT: Use and Disposal of Polychlorinated Biphenyls (PCB)

DATE October 6, 1983

NO.: MMO-1-84

TO:
1. Regional General Managers
1. Maintenance Management Divisions
2. District Offices - BMEO.
3 Maintenance Capable Offices
4. Bulk Mail Centers
5. Regional General Managers RE&B
6. Field Real Estate & Building Offices
7. Regional Safety Manager
8. MSC Safety Managers

FILE CODE: P - Buildings

This bulletin replaces MMO-13-80, Electrical Switchgear Maintenance (Regulations governing use and disposal of Polychlorinated Biphenyls (PCB)).

I. Summary

The U. S. Postal Service is ultimately responsible for proper use, storage, and final disposition of any PCB'S used in our electrical equipment. This responsibility cannot be contracted away. Therefore, local management must ensure that contractors who service PCB equipment comply with the EPA regulations.

Postal employees are not to be involved in servicing equipment containing PCB'S when there is a potential for coming in direct contact with PCB'S.

The EPA allows, under certain conditions, PCB'S to be disposed of by burning in large boilers. It is Postal Service policy that PCB'S will not be disposed of in our boilers.

II. Background

The Environmental Protection Agency (EPA), under authority granted in the Toxic Substances Control Act, has issued revised. regulations concerning the manufacture, use and disposal of a chemical substance known as polychlorinated biphenyls (PCB). The most common occurrence of PCB'S in postal facilities is in the dielectric\ coolant oil used in transformers. The most recognizable PCB dielectric oil by trade name is "Askarel", manufactured by Monsanto Corporation. Other representative trade names are: Aroclor, Pydraul,

Therminol, Pyroclor, Santotherm, Pyralene, Inerteen Asbestol, Chlorextol, Diachlor, Dykanol, Elemex, Hyvol, No-Flamol, Saf-T-Kuhl, Aroclor B, Clorinol, Clorphen, Eucarel. PCB'S may also be present in capacitors and fluorescent ballasts manufactured before 1978 and may be present in dielectric mineral oil which does not bear one of the above trade names.

III. Sources of Information

The purpose of this bulletin is to give an overview and practical approach to PCB regulations and requirements as they apply to most postal installations. If you have unique problems or extensive quantities of PCB'S in use or stored, you may wish to have copies of the regulations on site. However, these regulations have not been published, as yet, in one document. You will need copies of the following sections of the Federal Register:

Vol. 44, No. 106/Thursday, May 31, 1979 pp. 31515 through 31568

Vol. 47, No. 88/Thursday, May 6, 1982 pp. 19527

Vol. 47, No. 165/Wednesday, August 25, 1982 pp. 37342 through 37360

For additional background information, you may wish to have a copy of Federal Register:

Vol. 46, No. 46/Tuesday, March 10, 1981 pp. 16090 through 16098

EPA's Final PCB Ban Rule: Questions and Answers to Help You Meet These Requirements (Revised June, 1980)

Copies of the Federal Register are available from U.S.P.S. Library in L'Enfant Plaza, Regional EPA Offices (See Appendix A), or local university and metropolitan libraries. The above material, except the Questions and Answers, is very time consuming to read; therefore, specific questions can be answered most efficiently by calling your Regional EPA Office (See Appendix A) or MTSC at FTS: 743-9254.

IV. Definitions

(NOTE: These definitions are crucial to understanding the remainder of this bulletin.)

"PCB Item" - Any article, container, or equipment that contains PCB's at a concentration of 50 parts per million (PPM) or greater.

"PCB - - Contaminated Electrical Equipment" - Any electrical equipment (such as transformers, capacitors, circuit breakers, reclosers, voltage regulators, switches, cables, etc.) that

contain 50 PPM PCB, but less than 500 PPM PCB. Oil-filled electrical equipment other than circuit breakers, reclosers, and cable whose PCB concentration is unknown must be assumed to be PCB - Contaminated Electrical equipment.

"PCB - Transformer" - Any transformer that contains 500 PPM PCB or greater.

"Small, Capacitor" - A capacitor which contains less than 3 lbs. of dielectric fluid. If the weight of dielectric fluid is unknown, use the following criteria:

- If the total volume of the capacitor is less than 100 cubic inches, it is a small capacitor'.
- If the volume is between 100 and 200 cubic inches and the capacitor weighs less than 9 lbs, it is a small capacitor.
- If the volume is greater than 200 cubic inches, it is not a small capacitor.

'Totally Enclosed Manner" - A manner that results in no exposure of humans or the environment to PCB's.

V. Activities that are not permitted.

- PCB or PCB items. are not to be used or transported in commerce except in a totally enclosed manner. (NOTE: Transporting for disposal is addressed later.) Transformers which are intact and non-leaking are considered totally enclosed.
- PCB's or PCB items may not be exported for. disposal.
- Waste oil which contains any detectable concentration of PCB's may not be used as a sealant, coating, dust control agent, or in herbicides and pesticides.
- Any servicing of PCB transformers that requires the removal of the transformer coil from the transformer casing is prohibited.
- Servicing electromagnets', switches and voltage regulators with a PCB concentration of 500 PPM or greater which requires removal and rework of the internal components is prohibited.
- Dielectric fluid of concentration greater than 500 PPM must never be added to PCB-contaminated electrical equipment non-PCB transformer, or to dielectric fluids of less than 500 PPM PCB concentration.

VI. Activities that are permitted:

* PCB transformers may be used for the remainder of their useful lives provided that a quarterly inspection for leaks is made. If a PCB transformer is found to have a leak which results in any quantity of PCB's running off or about to run off the external surface, the transformer must be repaired or replaced. Clean-up of leaking material must start within 48 hours. Disposal of leaking material must be in accordance with EPA regulations discussed in Section VIII. Records of the inspections must be kept in accordance with Appendix B.

* A PCB transformer may be reclassified to PCB-contaminated electrical equipment or to a non-PCB transformer by draining and refilling and/or otherwise servicing. Reclassification requires testing after three months to show that PCB level is below 500 PPM for PCB-contaminated electrical equipment and 50 PPM for a non-PCB transformer. It is Postal Service Policy that this type of work be done by a competent contractor and not the U.S.P.S. maintenance personnel.

* PCB's removed from electrical equipment must be captured and either reused or disposed of as discussed below.

* Any dielectrical fluid containing 50 PPM or greater which is-used for servicing must be stored in accordance with EPA Regulations discussed in Section VIII.

* Electromagnets, switches and voltage regulators may be converted to PCB-contaminated electrical equipment or to a non-PCB classification by draining and refilling and/or otherwise servicing the equipment.

* PCB's of any concentration may be used in large capacitors. After October 1, 1988 large PCB capacitor must be located in a restricted-access (i.e., fenced or walled and locked) area.

* Circuit breakers, reclosers, and cable containing PCB's at any concentration may continue to be used; however, they may be serviced only with dielectric fluid containing less than 500 PPM.

* Small capacitors and fluorescent ballasts containing PCB's of any concentration may continue to be used.

VII. Marking Requirements:

The following items must be marked according to Figure 1 in Appendix C. Figure 2 may be used when the object is too small for Figure 1:

* Any container which contains PCB's or items which have been in contact with PCB's.

* PCB Transformers.

* PCB large high voltage capacitors (i.e., more than three lbs. of dielectric fluid and operating above 2000 volts).

* PCB large low voltage capacitors (i.e., more than three lbs. of dielectric fluid and operates below 2000 volts).

* Electric motors, hydraulic systems, and heat transfer systems which use PCB's in concentrations above 50 PPM.

PCB-Contaminated Electrical Equipment does not have to be marked.

VIII . Disposal of PCB's and PCB Items

The EPA regulations allow three methods of disposal of PCB's and materials which have come in contact with PCB's (not all methods are allowable for all forms of PCB's). These methods are:

* Incineration in an EPA approved incinerator.

* Incineration in a boiler.

* Disposal in an EPA approved chemical waste landfill.

Local management should arrange for disposal of Postal Service PCB's and PCB items through contractors who comply with EPA regulations for disposal. Local management must keep records of PCB disposal which include:

* Contractor’s name and address.

* What was disposed of.

* How much of the item was disposed of.

* Dates of disposal.

* Method of disposal.

* Name and location of the disposal site.

The Postal Service will not incinerate any PCB's in Postal Service boilers.

Small PCB capacitors and PCB fluorescent light ballast may be disposed of as municipal solid waste, if only a few items are to be disposed of. Contact your Regional EPA Office if you have a large quantity of small PCB Capacitors or fluorescent ballasts to dispose of.

Solid materials used for cleaning up PCB leaks and spills must be placed in containers described in Section IX and disposed of in a chemical waste landfill approved by the Regional EPA.

IX. Storage for Disposal

It may be necessary to store PCB's and PCB items prior to disposal as there are very few EPA approved incinerators or chemical waste landfills.

Containers used for storage of liquid PCB's shall comply with the" shipping container specification of the Department of Transportation, Specification 5, container without removable head or 2S, polyethylene containers. Non-leaking and structurally undamaged PCB Large High Voltage Capacitors and PCB-Contaminated Transformers that have not been drained of free flowing dielectric fluid may be stored on pallets next to an "approved" storage facility within the postal facility. PCB Transformers shall first be flushed three times with a solvent containing less than 50 PPM PCB and equal to 10% of the transformer's liquid capacity. The solvent may be reused until its PCB level reaches 50 PPM and then disposed of as required of PCB's.

The storage facility should have: adequate roof and walls to prevent rain water from reaching the stored PCB's and PCB items; an adequate floor with continuous curbing (minimum 6 inches high) providing a contaminant volume equal to at least two times the internal volume of the largest PCB articles or containers stored therein, whichever is greater; no drain valves, floor drains, expansion joints, sewer lines or other openings that would permit liquids to flow from the curbed area; floors and curbing constructed of continuous smooth and impervious materials; not located at a site that is below the 100 year-flood water elevation.

Stored materials shall be checked at least every 30 days for leaks.

X. Records

Records shall be developed for items used or stored which total 99.4 or more pounds of PCB's contained in PCB containers), for one or more PCB transformers or 50 or more PCB large high or low voltage capacitors. Records shall include the use and disposition of PCB's and PCB items. The records shall form the basis for a document prepared for each facility by July 1 of each year covering the previous calendar

year and shall be retained for five years after the facility ceases using or storing the PCB's and PCB items. The records must include:

1. Dates when PCB's and PCB items are removed from service, are placed into storage for disposal and placed into transport for disposal. Quantities of PCB's and PCB items shall be indicated using the following breakdown:

   a. Total weight in kilograms of any PCB's and PCB items in PCB containers including identification of container contents such as liquids and capacitors.

   b. Total number of PCB transformers and total weight in kilograms of any PCB's contained in the transformers.

   c. Total number of PCB large high or low voltage capacitors.

2. For PCB's and PCB items removed from service, the location of the initial disposal or storage facility and the name of the owner or operator of the facility.

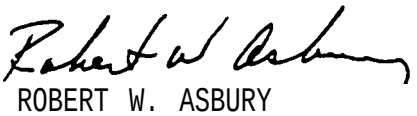
3. Total quantities of PCB's and PCB items remaining in service at the end of the calendar year using the following breakdown:

   a. Total weight in kilograms of any PCB's and PCB items in PCB containers, including identification of container contents such as liquids and capacitors.

   b. Total number of PCB transformers and total weight in kilograms of any PCB's contained in the transformers.

   c. Total number of PCB large high or low voltage capacitors.

Questions or comments should be directed to Maintenance Technical Support Center, Plant Equipment Branch, P.O. Box 1600, Norman, OK 73070-6704; Telephone (FTS) 743-8254.



ROBERT W. ASBURY
ACTING DIRECTOR
Maintenance Technical Support Center
Office of Maintenance Management

Attachments

APPENDIX A

EPA REGIONAL OFFICES

Region I
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont
John F. Kennedy Federal Building
Room 2303
Boston, Massachusetts 02203
(617) 223-0585

Region II
New York, New Jersey, Puerto Rico Virgin Islands, and Canal Zone
Federal Office Building
26 Federal Plaza
New York, New York 10007
(212) 264-0545

Region III
Delaware, District of Columbia Maryland, Pennsylvania, Virginia, and West Virginia
Curtis Building
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106
(215) 597-7668

Region IV
Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee
345 Courtland St., NE
Atlanta, Georgia 30308
(404) 881-3864

Region V
Illinois, Indiana, Minnesota, Michigan, Ohio, and Wisconsin
230 South Dearborn
Chicago, Illinois 60604
(312) 353-2291

Region VI
Arkansas, Louisiana, New Mexico, Oklahoma, and Texas
First International Building
1201 Elm Street
Dallas, Texas 75270
(214) 767-9772

Region VII
Iowa, Kansas, Missouri, and Nebraska
1735 Baltimore Avenue
Kansas City, Missouri 64108
(816) 374-6538

Region VIII
Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming
1860 Lincoln Street
Denver, Colorado 80295
(303) 837-3926

Region IX
Arizona, California, Hawaii, Nevada, Guam, American Samoa, and Trust Territory of the Pacific
100 California Street
San Francisco, California 94111
(415) 974-8389

Region X
Alaska, Idaho, Oregon, and Washington
1200 Sixth Avenue
Seattle, Washington 98101
(206) 442-2634

APPENDIX B

Required Records for PCB Transformers

A. Its location.

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

C. The person performing the inspection.

D. The location of any leak(s).

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

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

G. A description of any cleanup, containment, or repair performed.

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

APPENDIX C

Marking Formats

The following formats shall be used for marking:

a. Large PCB Mark-ML. Mark ML shall be as shown in Figure 1, letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The size of the mark shall be at least 15.25 cm. (6 inches) or each side. If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 5 cm. (2 inches) on each side.

b. Small PCB Mark-ML Mark ML. shall be as shown in Figure 2, letters and striping on a-white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The mark shall be a rectangle 2.5 by 5 cm. (1 inch by 2 inches). If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 1 by 2 cm. (.4 by .8 inches).

These labels should be purchased locally. They are also available from:

Industrial Safety
1390 New Brocht Rd.
Lima, OH 45801
(419)227-6030

Seton Name Plate Corp.
P. O. Drawer BG-1331
New Haven, CT 06505
(203) 772-2520

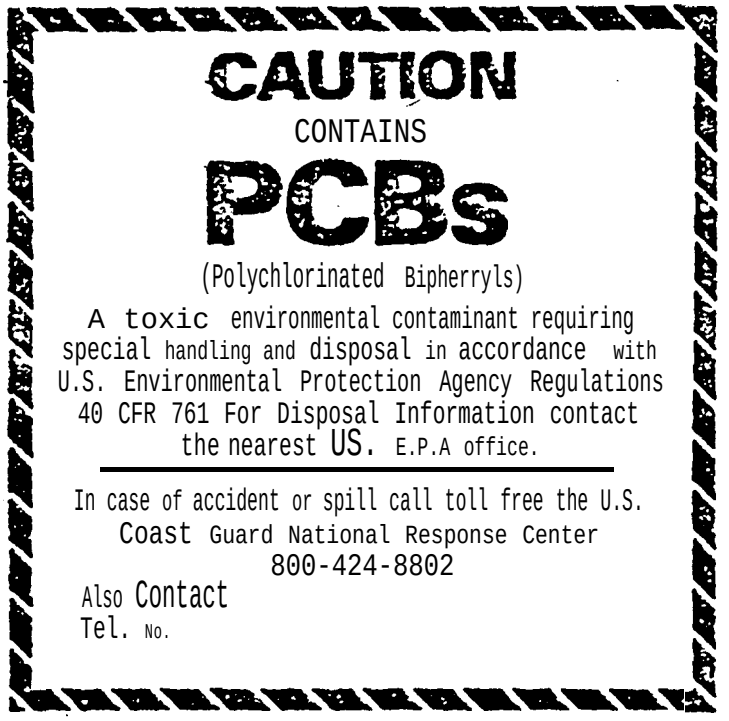


Figure 1

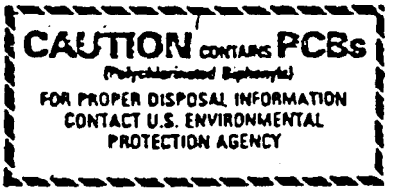


Figure 2