

SECTION 02 84 33
REMOVAL AND DISPOSAL OF POLYCHLORINATED
BIPHENYLS (PCBS)

PART 1 GENERAL

1.01 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.
 - 1. U.S. National Archives and Records Administration (NARA):
 - a. 29 CFR 1910.145, Specifications for Accident Prevention Signs and Tags.
 - b. 29 CFR 1910.1000, Air Contaminants.
 - c. 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
 - d. 49 CFR 171, General Information, Regulations, and Definitions.
 - e. 49 CFR 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements.
 - f. 49 CFR 173, Shippers - General Requirements for Shipments and Packagings.
 - g. 49 CFR 174, Carriage by Rail.
 - h. 49 CFR 175, Carriage by Aircraft.
 - i. 49 CFR 176, Carriage by Vessel.
 - j. 49 CFR 177, Carriage by Public Highway.
 - k. 49 CFR 178, Specifications for Packagings.
 - l. 49 CFR 179, Specifications for Tank Cars.

1.02 REQUIREMENTS

- A. The work includes the removal and disposal of PCB containing devices and equipment including, but not limited, fluorescent light ballasts. Perform work in accordance with 40 CFR 761 and the requirements specified herein.

1.03 DEFINITIONS

- A. Leak: Leak or leaking means any instance in which a PCB Article, PCB Container, or PCB Equipment has any PCBs on any portion of its external surface.
- B. PCBs: PCBs as used in this specification mean the same as PCBs, PCB Article, PCB Article Container, PCB Container, PCB Equipment, PCB Item,

PCB Transformer, PCB-Contaminated Electrical Equipment, as defined in 40 CFR 761, Section 3, Definitions.

- C. Spill: Spill means both intentional and unintentional spills, leaks, and other uncontrolled discharges when 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.

1.04 QUALITY ASSURANCE

- A. Training: Instruct employees on the dangers of PCB exposure, on respirator use, decontamination, and applicable OSHA and EPA regulations.
- B. Certified Industrial Hygienist (CIH): Obtain the services of an industrial hygienist certified by the American Board of Industrial Hygiene to certify training, review and approve the PCB removal plan, including determination of the need for personnel protective equipment (PPE) in performing PCB removal work.
- C. Regulation Documents: Maintain at all times one copy each at the office and one copy each in view at the Job Site 29 CFR 1910.1000, 40 CFR 761, and Contractor work practices for removal, storage and disposal of PCBs.
- D. Surveillance Personnel: Surveillance personnel may enter PCB control areas for brief periods of time provided they wear disposable polyethylene gloves and disposal polyethylene foot covers, as a minimum. Additional protective equipment may be required if respiratory hazard is involved or if skin contact with PCB is involved.

1.05 SUBMITTALS

- A. Action Submittals:
 - 1. Preconstruction Submittals:
 - a. PCB Removal Work Plan.
 - b. PCB Disposal Plan.
- B. Informational Submittals:
 - 1. Certificates:
 - a. Training certification.
 - b. Qualifications of CIH.
 - c. Notification.
 - d. Transporter Certification of notification to EPA of their PCB waste activities and EPA ID numbers.
 - e. Certification of Decontamination for PCB Spill.

- f. Post Cleanup Sampling Data.
- g. Certificate of Disposal.

1.06 EQUIPMENT

A. Special Clothing:

1. Work clothes consist of PPE as required by OSHA regulations, including, but not limited to the following:
 - a. Disposable coveralls.
 - b. Gloves (Disposable rubber gloves may be worn under these).
 - c. Disposable foot covers (polyethylene).
 - d. Chemical safety goggles.
 - e. Half mask cartridge respirator.

B. Special Clothing for Government Personnel: Provide PPE specified in Paragraph Special Clothing to the Contracting Officer as required for inspection of the work.

C. PCB Spill Kit:

1. Assemble a spill kit to include the following items:

Item	Minimum Quantity
1. Disposable gloves (polyethylene)	6 pairs
2. Gloves with a high degree of impermeability to PCB	6 pairs
3. Disposable coveralls with permeation resistance to PCB	4 each
4. Chemical safety goggles	2 each
5. Disposable foot covers (polyethylene)	6 pairs
6. PCB Caution Sign: "PCB Spill--Authorized Personnel Only"	2 each
7. Banner guard or equivalent banner material	100 feet
8. Absorbent material	5 bags
9. Blue polyethylene waste bags	5 each
10. Cloth backed tape	1 roll
11. Area access logs, blank	10 each
12. Brattice cloth, 6' x 6'	1 piece
13. Rags	20 each

Item	Minimum Quantity
14. Ball point pens	20 each
15. Herculite, 4' x 4' and 8' x 8'	2 each and 1 each
16. Blank metal signs and grease pencils	2 each
17. Waste containers 55-gallon drum, may be used as container for kit	1 each

1.07 QUALITY ASSURANCE

- A. Training Certification: Submit certificates, prior to the start of work but after the main abatement submittals, signed and dated by the CIH and by each employee stating that the employee has received training. Organize certificates by individual worker, not grouped by type of certificates.
- B. Qualifications of CIH: Submit the name, address, and telephone number of the Industrial Hygienist selected to perform the duties in Paragraph Certified Industrial Hygienist (CIH). Submit proper documentation that the Industrial Hygienist is certified, including certification number and date of certification/recertification.
- C. PCB Removal Work Plan: Submit a detailed job-specific plan of the work procedures to be used in the removal of PCB-containing materials, not to be combined with other hazardous abatement plans. Provide a Table of Contents for each abatement submittal which follows the sequence of requirements in the Contract. Include in the plan a sketch showing the location, size, and details of PCB control areas. Include in the plan, eating, drinking, smoking, and restroom procedures, interface of trades, sequencing of PCB related work, PCB disposal plan, respirators, protective equipment, and a detailed description of the method of containment of the operation to ensure that PCB contamination is not spread or carried outside of the control area. Obtain approval of the plan prior to the start of PCB removal work.
- D. PCB Disposal Plan:
 1. Submit a PCB Disposal Plan within 45 calendar days after award of contract for Contracting Officer's approval. Comply with applicable requirements of federal, state, and local PCB waste regulations and address:
 - a. Identification of PCB wastes associated with the Work.
 - b. Estimated quantities of wastes to be generated and disposed of.
 - c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include

the facility location and a 24-hour point of contact. Furnish two copies of EPA PCB waste permits and EPA Identification numbers.

- d. Names and qualifications (experience and training) of personnel who will be working onsite with PCB wastes.
 - e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
 - f. Spill prevention, containment, and cleanup contingency measures to be implemented.
 - g. Work plan and schedule for PCB waste containment, removal, and disposal. Clean up and containerize wastes daily.
- E. Notification: Notify the Contracting Officer 20 days prior to the start of PCB removal work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PROTECTION

- A. Decontamination Room, Clean Room, and Shower Facilities:
- 1. Provide material and labor for construction of a decontamination room, a clean room, and shower facilities. Provide rooms with doors and attach to the exit ways of PCB work areas. Provide rooms of sufficient size to accommodate the Contractor's operation within. Existing facilities with water closets, urinals, wash basins and showers may be used if available. Provide portable toilet and shower facilities. Locate shower facilities between the clean room and decontamination room. Provide separate clothing lockers or containers in each room to prevent contamination of street and work clothes.
 - 2. Remove PCB-contaminated PPE in the decontamination room before proceeding to showers. Workers must shower before lunch and at the end of each day's work. Hot water, towels, soap, and hygienic conditions are the responsibility of the Contractor.
- B. PCB Control Area: Isolate PCB control area by physical boundaries to prevent unauthorized entry of personnel. Food, drink, and smoking materials are not permitted in areas where PCBs are handled, or PCB items are stored.
- C. Personnel Protection: Workers must wear and use PPE, as recommended by the Industrial Hygienist, upon entering a PCB control area. If PPE is not required per the CIH, specify in the PCB removal work plan.

- D. Footwear: Work footwear remains inside work area until completion of the Job.
- E. Permissible Exposure Limits (PEL): PEL for PCBs is 3.1 E-08-lb/cubic foot on an 8-hour time weighted average basis.
- F. Special Hazards:
 - 1. Do not expose PCBs to open flames or other high temperature sources since toxic decomposition by-products may be produced.
 - 2. Do not heat PCBs to temperatures of 135 degrees F or higher without Contracting Officer's concurrence.
- G. PCB Caution Label:
 - 1. 40 CFR 761, Subpart C. Affix labels to PCB waste containers and other PCB-contaminated items. Provide label with sufficient print size to be clearly legible, with bold print on a contrasting background, displaying the following:
 - a. CAUTION: Contains PCBs (Polychlorinated Biphenyls).
- H. PCB Caution Sign: 29 CFR 1910.145. Provide signs at approaches to PCB control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area.

3.02 WORK PROCEDURE

- A. Furnish labor, materials, services, and equipment necessary for the complete removal of PCBs located at the Site as indicated or specified in accordance with local, state, or federal regulations. Package and mark PCB as required by EPA and DOT regulations and dispose of off Government property in accordance with EPA, DOT, and local regulations at a permitted site.
- B. No Smoking: Smoking is not permitted within 50 feet of the PCB control area. Provide "No Smoking" signs as directed by the Contracting Officer.
- C. Work Operations:
 - 1. Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with 40 CFR 761 and the applicable requirements of this section, including but not limited to:
 - a. Obtaining advance approval of PCB storage sites.
 - b. Notifying Contracting Officer prior to commencing the operation.
 - c. Reporting leaks and spills to the Contracting Officer.
 - d. Cleaning up spills.

- e. Maintaining an access log of employees working in a PCB control area and providing a copy to the Contracting Officer upon completion of the operation.
- f. Inspecting PCB and PCB-contaminated items and waste containers for leaks and forwarding copies of inspection reports to the Contracting Officer.
- g. Maintaining a spill kit as specified in Paragraph PCB Spill Kit.
- h. Maintaining inspection, inventory, and spill records.

3.03 PCB TRANSFORMERS

- A. Draining of Transformer Liquid: Perform work in accordance with 49 CFR 171, 49 CFR 172, 49 CFR 173, 49 CFR 174, 49 CFR 175, 49 CFR 176, 49 CFR 177, 49 CFR 178, and 49 CFR 179, Subchapter C and as specified herein. Drain the transformer, switches, and regulators of free flowing liquid prior to transportation. Place the drained liquids in DoT Spec drums. The drums must not contain more than 50 gallons of oil. If the equipment cannot be drained, then place it in DoT Spec drums. DoT drum specifications must meet UN 1A1/Y1.6 (steel drum) or UN 1H1/Y1.6 (plastic drum).
- B. Markings: Provide drums and drained PCB-contaminated electrical equipment with caution label markings as specified in Paragraph PCB Caution Label.
- C. Laboratory Analysis:
 - 1. Provide all transformers with a laboratory analysis for turn-in. DLA DS prefers a gas chromatograph test. The only two exceptions to this rule are:
 - a. The transformer is hermetically sealed (solder sealed or fusion sealed. No access ports or openings).
 - b. The name plate states that the transformer contains Pyranol, Interteen, etc.
 - 2. Attach a copy of the lab analysis to both the DD 1348-1 and the transformer itself.
- D. Markings:
 - 1. Transformers, Less Than 50 ppm: Add absorbent material to absorb residue oil remaining after draining. Write the date drained on the transformer. Turn in transformers to DLA DS.
 - 2. Transformers, 50 ppm to 499 ppm: Same procedure as transformers in the less than 50 ppm range.
 - 3. Transformers, Greater Than 500 ppm: Stencil date drained on the transformer. Turn in transformer to DLA DS.

4. Drums:
 - a. Stencil on DOT-approved 55 gallon drums containing PCB liquid the following:
 - 1) Ppm.
 - 2) Date drum filled.
 - 3) Serial number of transformer liquid came from.
 - 4) National Stock Number:
 - a) "9999-00-OIL" for <50 ppm.
 - b) "9999-00-CONPCB" for 50 ppm to 499 ppm.
 - c) "9999-00-PCBOIL" for >500 ppm.
5. Do not mix different ppms in the same drum. Drums must have a 2-inch ullage space from the top of the drum.

3.04 PCB REMOVAL

- A. Select PCB removal procedure to minimize contamination of work areas with PCB or other PCB-contaminated debris/waste. Handle PCBs such that no skin contact occurs. PCB removal process should be described in the work plan.
- B. Confined Spaces: As feasible, do not carry out PCB handling operations in confined spaces. A confined space means a space having limited means of egress and inadequate cross ventilation.
- C. Control Area: Establish a PCB control area around the PCB item as specified in Paragraph PCB Control Area. Only personnel briefed on the elements in the Paragraph Training and on the handling precautions are allowed into the area.
- D. Exhaust Ventilation: If used, discharge exhaust ventilation for PCB operations to the outside and away from personnel.
- E. Temperatures: As feasible, handle PCBs at ambient temperatures and not at elevated temperatures.
- F. Solvent Cleaning: Clean contaminated tools, containers, etc., after use by rinsing three times with an appropriate solvent or by wiping down three times with a solvent wetted rag. Suggested solvents are Stoddard solvent or hexane.
- G. Drip Pans: Drip pans are required under portable PCB transformers and rectifiers in use or stored for use. Provide the pans with a containment volume of at least one and one-half times the internal volume of PCBs in the item.
- H. Evacuation Procedures: Provide written procedures for evacuation of injured workers. Do not delay aid for a seriously injured worker for reasons of decontamination.

3.05 PCB SPILL CLEANUP REQUIREMENTS

- A. PCB Spills: Immediately report to the Contracting Officer any PCB spills on the ground or in the water, PCB spills in drip pans, or PCB leaks.
- B. PCB Spill Control Area: Rope off an area around the edges of a PCB leak or spill and post a “PCB Spill Authorized Personnel Only” caution sign. Immediately transfer leaking items to a drip pan or other container.
- C. PCB Spill Cleanup: 40 CFR 761, Subpart G. Initiate cleanup of spills as soon as possible, but no later than 48 hours of its discovery. To clean up spills, personnel must wear the PPE prescribed in Paragraph Special Clothing of this section. If misting, elevated temperatures or open flames are present, or if the spill is situated in a confined space, notify the Contracting Officer. Mop up the liquid with rags or other conventional absorbent. Properly contain and dispose of spent absorbent as solid PCB waste.
- D. Records and Certification: Document the cleanup with records of decontamination in accordance with 40 CFR 761, Section 125, Requirements for PCB Spill Cleanup. Provide certification of decontamination.
- E. Sampling Requirements: Perform post cleanup sampling as required by 40 CFR 761, Section 130, Sampling Requirements. Do not remove boundaries of the PCB control area until site is determined satisfactorily clean by the Contracting Officer.

3.06 STORAGE FOR DISPOSAL

- A. Storage Containers for PCBs: 49 CFR 178. Store liquid PCBs in Department of Transportation (DOT) Specification 17E containers. Store nonliquid PCB mixtures, articles, or equipment in DOT Specification 5, 5B, or 17C containers with removable heads.
- B. Waste Containers:
 - 1. Label with the following:
 - a. “Solid (or Liquid) Waste Polychlorinated Biphenyls.”
 - b. The PCB Caution Label, Paragraph PCB Caution Label.
 - c. The date the item was placed in storage and the name of the cognizant activity/building.
- C. PCB Articles and PCB-Contaminated Items: Label with items b. through c. above.

- D. Approval of Storage Site: Obtain in advance Contracting Officer approval using the following criteria without exception.
1. Adequate roof and walls to prevent rainwater from reaching the stored PCBs.
 2. An adequate floor which has continuous curbing with a minimum 6-inch high curb. Such 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 equipment or containers stored therein, whichever is greater.
 3. No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area.
 4. Floors and curbing constructed of continuous smooth and impervious materials such as portland cement, concrete, or steel to prevent or minimize penetrations of PCBs.
 5. Not located at a site which is below the 100-year flood water elevation.
 6. Post each storage site with the PCB Caution Sign, Paragraph PCB Caution Sign.

3.07 CLEANUP

- A. Maintain surfaces of the PCB control area free of accumulations of PCBs. Restrict the spread of dust and debris; keep waste from being distributed over work area.
- B. Do not remove the PCB control area and warning signs prior to the Contracting Officer's approval. Reclean areas showing residual PCBs.

3.08 DISPOSAL

- A. Comply with disposal requirements and procedures outlined in 40 CFR 761. Do not accept PCB waste unless it is accompanied by a manifest signed by the Government. Before transporting the PCB waste, sign and date the manifest acknowledging acceptance of the PCB waste from the Government. Return a signed copy to the Government before leaving the Job Site. Ensure that the manifest accompanies the PCB waste at all times. Submit transporter certification of notification to EPA of their PCB waste activities.
- B. Certificate of Disposal:
1. 40 CFR 761. Submit to the Government within 30 days of the date that the disposal of the PCB waste identified on the manifest was completed. Include in the certificate for the PCBs and PCB items disposed:
 - a. The identity of the disposal facility, by name, address, and EPA identification number.

- b. The identity of the PCB waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.
- c. A statement certifying the fact of disposal of the identified PCB waste, including the date(s) of disposal, and identifying the disposal process used.
- d. A certification as defined in 40 CFR 761, Section 3.
- e. Payment Upon Furnishing Certificate of Disposal of PCBs:
Payment will not be made until the certificate of disposal has been furnished to the Contracting Officer.

END OF SECTION

