

## 4.08 POLYCHLORINATED BIPHENYLS (PCB) PROGRAM

This program contains requirements for practices designed and implemented to protect employees, students, visitors and the environment from the risks associated with PCBs, and to ensure compliance with all safety, health and environmental requirements as directed by federal, state and local regulations regarding PCBs. During the 1970s, federal legislation mandated the elimination of PCBs from distribution in commerce. To minimize the potential for adverse health effects caused by PCBs and other substances, Congress passed the Toxic Substances Control Act (TSCA), which strictly regulates all aspects of PCB use.

### A. SCOPE

This program is applicable to all employees and students who use or dispose of PCBs or PCB contaminated items, materials or wastes as a result of University-related activities. The purpose of this program is to enable personnel to recognize those PCB-containing items and PCB-containing wastes that are regulated by law and regulations, and to inform them of procedures to be followed for proper disposal.

The University of New Mexico has assigned the responsibility for management of all PCBs to the Department of Safety and Risk Services (SRS). The primary objectives of SRS's PCB Program are to protect human health and the environment, and to ensure compliance with federal, state and local environmental laws, and regulations.

### B. DEFINITIONS

**Polychlorinated Biphenyls (PCBs):** In general, PCBs are a subset of the class of synthetic organic chemicals known as chlorinated hydrocarbons, that include 209 different arrangements of chlorine atoms on a biphenyl molecule (two benzene rings joined together by a carbon-carbon bond). Between 1926 and 1977, PCBs were manufactured for use in products such as dielectric fluids which required low electrical conductivity, high boiling point, high chemical stability, and low water solubility. Some common trade names of PCB-containing fluids are *Aroclor*, *Askarel*, *Chlorinol*, *Dykanol*, *Elemex*, *Hyvol*, *Inerteen*, *Pyranol*, *Pyrochlor*, and *Santovac*.

### C. LOCATIONS OF PCBs

PCBs are most often found in oil-filled electrical equipment that was manufactured before 1980. They are present in certain electrical transformers on campus and SRS maintains a current inventory list of these transformers. PCBs may also be present in hydraulic fluids, fluorescent lighting ballasts, transformers, capacitors, and other similar devices. Substances that may be regulated by this program include, but are not limited to: dielectric fluids, contaminated solvents, oils, waste oils, heat transfer fluids, hydraulic fluids, paints, sludges, slurries, contaminated soils, materials contaminated as a result of spills, and other chemical substances, or combination of substances, including impurities and byproducts.

The majority of fluorescent light ballasts manufactured prior to 1979 contain about a teaspoon of concentrated PCB's sealed inside the capacitor. The capacitor is usually surrounded by a tar-like potting material and is enclosed in the steel ballast box. When a ballast fails, the internal capacitor may rupture and leak PCB's. The U.S. Environmental Protection Agency banned the further manufacture of equipment containing PCB's in 1979. LIGHT BALLASTS MANUFACTURED AFTER 1979 DO NOT CONTAIN PCB's AND ARE LABELED "Non-PCB's."

**NOTE:** Since oils are the primary carrier of PCBs, it is recommended that equipment containing an unidentified or unknown oil with unknown characteristics be sampled and tested by SRS, who will coordinate regulatory issues if the fluid tests positive for PCBs. SRS will also retain the analytical data on file for future reference. PCB waste will usually take one of four physical forms: oils pumped from items such as transformers and power supplies; intact items such as transformers, capacitors and ballasts; leaking items such as transformers, capacitors and ballasts; and PCB-contaminated items such as PPE, rags, and spill cleanup debris.

#### **D. RESPONSIBILITIES**

All personnel who handle PCB's, including PCB-containing equipment and PCB-containing waste, must read, understand, and comply with the requirements of this program. Other related information is contained in the SRS Programs titled *Chemical Spill Response*, *Hazardous Chemical Waste*, and *Wastewater*.

Specific responsibilities regarding PCBs are as follows:

1. Safety and Risk Services Department (SRS) is responsible for:
  - Coordinating all sampling, testing, spill cleanup and disposal issues; and,
  - Transporting small capacitors, ballasts, and any other small items not requiring heavy duty lifting devices.
2. Other UNM Staff Personnel are responsible for:
  - Notifying SRS immediately of any identified or suspected releases of PCBs;
  - Notifying SRS prior to any movement of PCB-containing electrical equipment.;
  - Safely shorting out all capacitors after disconnecting them;
  - Coordinating transport of large capacitors and transformers to PPD's storage shed;
  - Checking PCB-containing equipment or potentially PCB-containing equipment for conditions that may indicate a current or forthcoming leak, such as oil saturated joints or connections and/or drip spots below joints or connections;
  - When a PCB-contaminated item is removed from service and is intended for disposal, notifying SRS immediately since EPA requires it be disposed of within one year. This time limit is the maximum allowed per regulation between the date that the item was declared "destined for disposal" and the actual final disposal date at an EPA-permitted disposal facility.
  - Immediately reporting to SRS any abandoned or apparently abandoned PCB-containing items such as fluorescent lamp ballasts or fixtures with tar-like staining, oil filled capacitors or transformers, or unlabeled containers of oil.

- Notifying SRS immediately of PCB-containing or potential PCB-containing items that have faded, illegible, or missing labeling.
- Always wearing proper personal protective equipment (PPE) and handling all materials used in the maintenance of PCB-containing equipment as PCB-contaminated. This means PPE, tools, rags, and any other item that has come in contact with a PCB-contaminated surface.

## **E. HANDLING REQUIREMENTS**

Federal law restricts uses in the workplace as well requiring very stringent spill cleanup requirements which include post cleanup sampling verification and, in some cases, EPA notification. Take special care to ensure that PCBs (e.g., oil or tar from a ballast, capacitor, or transformer) are not allowed to contact any surface unintentionally. Any surfaces that do come into contact with PCBs must be handled as PCB-contaminated. Do not attempt to clean or remediate a PCB spill or PCB contamination without first contacting SRS at 277-2753.

In general, PCBs can be used only in a totally enclosed manner, i.e., within a sealed unit (e.g., light ballast), with the following exceptions:

- PCBs at concentrations less than 50 ppm used to service equipment where dielectric, heat transfer, or hydraulic systems currently contain PCBs at 50 ppm or greater and require fluid be added to maintain proper operational performance.
- PCBs used in small quantities for research and development if the quantity of PCBs “is originally packaged in one or more hermetically sealed containers of no more than 5 milliliters, and the PCBs are used only for the 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.”
- Permanent microscopy mounting medium applications, microscopy immersion oil in fluorescence microscopy, optical liquid applications, and analytical reference samples.

## **F. SAMPLING AND TESTING FOR PCBs IN PRODUCTS**

SRS can arrange for sampling and testing of any oil or oil-containing item that is suspected to contain PCBs. It is in the best interest of the organization that uses or owns this type of material to be certain whether or not an item contains PCBs, either through manufacturer information, MSDS information or through laboratory analysis. PCBs will most often be found in oil-filled electrical equipment that was manufactured before 1980 and they will be found less often in hydraulic systems and heat transfer systems.

## **G. SPILL CONTAINMENT REQUIREMENTS**

All non-totally enclosed PCBs in use, or in storage for use, with the exception of energized pole mounted transformers, must be equipped with impermeable spill containment with a capacity at least as great as the larger of:

- Twice the volume of the largest PCB item stored in the spill containment structure.

- 25% of the total volume of all PCB items stored in the spill containment structure.

## H. DOCUMENTATION REQUIREMENTS

### 1. **Releases** - SRS requires detailed information to document all releases of PCBs including:

- The date on which the release was first discovered.
- If known, the date on which the release first occurred.
- Location of the release.
- An estimate of the amount of fluid released by the release.
- The date and time of cleanup.
- Information regarding the spread of contamination and repairs to equipment.

**Note:** Cleanup of all releases must be initiated within 24 hours from the time the release was first discovered.

### 2. **Annual Inspections** - SRS documents the annual PCB-contaminated transformer inspections with the following information:

- I.D. Number of transformer
- Specific location of the transformer.
- Specific date and time of the inspection.
- Name of the person performing the inspection.
- Comments regarding any suspected or confirmed leakage.

## I. WASTE MANAGEMENT OF PCBS

- **Labeling** - It is the owner or waste generator's responsibility to properly label PCB waste.
- **Requesting a PCB Waste Pick-Up** - To request a pick-up of PCB-containing waste, the waste generator must submit a completed Hazardous Materials Disposal Request (HMDR) form (print from "Important Forms" on the SRS web site) to SRS. Be sure to keep a copy of the HMDR for your files. Retaining a copy of the HMDR gives the owner of PCB-containing equipment an out of service date record prior to disposal. Note that the PCB-containing waste will not be picked up if the HMDR form has not been filled out completely, or requests pickup of capacitors that have not been shorted.

PCB wastes are not subject to the volume and time limits for satellite accumulation areas as RCRA wastes are, nor do they require a Hazardous Waste Label. PCB wastes should, however, be properly labeled and submitted for pickup as soon as possible after generation to avoid potential for spread of PCB contamination at the generator's location.

Generators are reminded that at no time should they take it upon themselves to transport PCB waste to SRS or to any other location, either on or off UNM property.

EPA requirements dictate that PCB material contaminated at 50 ppm or greater (or any concentration if the PCB concentration source is at least 50 ppm) must be disposed at an EPA-Permitted disposal facility within one year of this out of service date. The recommendation to track PCBs at a lower concentration limit of 2 ppm (as opposed to 50

ppm) provides UNM with a precautionary buffer and allows SRSs personnel to use PCB concentration data when considering disposal options. **Do not leave PCB-contaminated materials outside uncovered awaiting pick-up.**

- **Items with Accessible PCBs** - When an item destined for waste disposal contains accessible PCB contaminated oil, SRS may be able to assist with arrangements to have a qualified/certified contractor pump the oil into drums. Generators must not attempt to do this themselves due to the great potential for spreading PCB contamination. They will properly label the drum(s) of PCB oil as well as the item from which the oil was pumped. Once the oil has been pumped out of the item, it is the responsibility of the PCB waste generator to complete a HMDR form for both the oil pumped from the item, as well as the item itself. The HMDR may list additional PCB waste. Submit the HMDR to Chemical Hygiene, to initiate pick-up scheduling.
- **PCB Items that are Totally Enclosed** - Place totally enclosed PCB items (ballasts, capacitors, etc.) destined for disposal in either a plastic bag or other suitably sized container. Place items larger than 100 cubic inches in a comparably sized drum or on a containment pallet. Complete a HMDR as in “Items with Accessible PCBs.” In this case, proper PCB waste labeling is the responsibility of the waste generator. If the items are in a drum (PCB article container), put a PCB label on the drum, available from SRS. If the items are in a bag, put the PCB label on the bag. If the items are on a containment pallet, put a PCB label on each item.
- **PCB Items That Are Leaking PCBs** - If the PCB waste (e.g., ballast, capacitor, voltage regulator) is leaking, it is extremely important that the leaking material be contained. Special care should go into complying with the MSDS for PCBs in order to avoid human exposure and environmental contamination. Any PPE used in handling a leaking item must be handled as a PCB contaminated waste, with no exceptions. Any leaking items must also have special attention given to them to avoid spread of contamination to material handlers or the environment. Any event that includes the leaking or spill of PCB material requires involved personnel to immediately contact SRS for instruction and assistance in remediation. Any PCB item that is leaking should be placed into double 6 mil plastic bags, sealed, and labeled with the PCB label. If the item is too large to be placed into a plastic bag, double wrap it in 6-mil plastic sheeting, seal it closed with duct tape, and label it with the PCB label.

- **Leaking Fluorescent Light Ballasts** - All personnel working with fluorescent lighting at UNM must give special attention to leaks and spills. Fluorescent light ballasts, due to their numbers at UNM are the most common PCB item to be found leaking. Often the leaking ballast will contaminate other parts of the light fixture causing the entire fixture to become PCB contaminated waste. It is often less expensive to remove and replace a PCB contaminated light fixture than it is to clean it. If a PCB ballast has contaminated a light fixture, do not attempt to dismantle the ballast/fixture assembly. Prepare the ballast/light fixture for disposal according to instructions in “PCB Items that are leaking PCBs”. Due to the fact that fluorescent light ballasts have ruptured during maintenance procedures, all personnel who perform maintenance tasks on these items should be diligent in their compliance with the PPE requirements stated in the MSDS for PCBs.
- **Other PCB Contaminated Items** - All materials used in handling or cleaning up PCB material should be assumed to be PCB contaminated and thus handled as such. PCB contaminated rags, PPE, and spill cleanup debris must be placed into plastic bags with a minimum thickness of 6 mil, sealed, labeled, and submitted to Chemical Hygiene on an HMDR form for waste pickup scheduling. Care should be taken to assure that no PCB contamination is spread beyond the material going into the bag.