

Basis of Design

The purpose of this section is to provide the guidelines for proper cleanup and disposal of polychlorinated biphenyls (PCBs).

Overview

Polychlorinated biphenyls (PCBs) are toxic, persistent manmade chemicals that were widely used as an oil additive in electrical equipment and as a plasticizer in caulk and expansion joint material starting in the 1950s. Congress banned the manufacture and use of PCBs in 1978.

PCBs are subject to regulations and pose a long-term liability to the UW. The Washington State Department of Ecology regulates PCB wastes containing up to 50 ppm PCBs. The Environmental Protection Agency (EPA) regulates PCB wastes of 50 ppm and greater. Both agencies have requirements for management and disposal of PCB wastes. The UW also restricts the transporters and disposal facilities used for those wastes.

Oil-filled electrical transformer replacement (Seattle campus)

The Seattle campus has mechanical rooms and electrical vaults that contain oil-filled transformers. Some of these transformers have PCB-contaminated oil. There is no surface contamination, but sometimes access is limited, and there are ongoing requirements such as signage, inspections and maintenance.

Assume that any oil-filled transformer or other electrical equipment contains PCBs unless known otherwise. Contact the PCB Coordinator for information about specific transformers and other electrical equipment. Oil-filled electrical equipment must be replaced as part of capital improvement projects whenever feasible. All PCB contamination must be removed from the vault or mechanical room. PCB concentrations must be determined in all oil-filled electrical equipment before disposal.

For any construction activity in mechanical rooms and electrical vaults with oil-filled transformers, review the existing analytical data or plan on obtaining an environmental contractor for a sampling survey. A work plan must be submitted to EH&S for review and comment. The work plan must show that proper precautions will prevent personnel exposure and further contamination.

PCB encapsulation (Seattle campus)

There are several mechanical rooms on the Seattle campus where PCB floor and wall contamination has been encapsulated in place. EPA regulations require that encapsulated surfaces be marked with the yellow "Caution Contains PCBs" sticker typically used for labeling PCB transformers (>500 ppm PCBs). Signs posted inside these rooms warn against disturbing encapsulated surfaces without first contacting EH&S.

The following rooms have PCB contamination encapsulated in place: Haggett Hall North, G203 and South, G206; Health Sciences Building, B123A and D005; McCarty Hall, G021, G046, G056; Mechanical Engineering, B009; Power Plant, 027 and Terry Lander, TB003.

If drilling or other activity will disturb an encapsulated surface, you must submit a work plan to EH&S for review prior to the start of work. There is not a prohibition against drilling into encapsulated surfaces, but the work plan must show that proper precautions will prevent personnel exposure and further contamination.

PCB contaminated caulking

Buildings constructed or renovated between 1950 and 1978 or later may have PCBs at high levels in the caulk around windows and expansion joints and possibly in neoprene pipe insulation. Exposure may occur if the caulk has begun to degrade or has been disturbed.

For demolition or remodeling of buildings constructed or renovated between 1950 and 1978, EH&S recommends representative sampling for PCBs in caulk and expansion joint material before going out to bid. Sampling is also recommended for maintenance that will disturb window caulk or expansion joints. If the caulk contains very high concentrations of PCBs, more sampling around surrounding building materials may be necessary to determine whether other surfaces are contaminated. PCB mitigation may be required if elevated PCB concentrations are found. Consult with the EH&S PCB Coordinator for any existing samples in that location.

Caulk containing more than 50 ppm PCBs must be removed and disposed of as hazardous waste. PCB concentrations must be determined in all construction and demolition debris before disposal.

Any work plan must include precautions to prevent personnel exposure and further contamination.

Other equipment containing PCBs

Other types of older oil-filled electrical equipment must be removed whenever feasible and disposed of properly through EH&S. Examples of items include old x-ray machines and other older laboratory equipment with power sources, power generators and capacitors. Some ballasts contain PCBs. For more information about ballasts, see the [Design Guide for Fluorescent Lights and Ballasts](#).

Records and reports

EH&S maintains all mandatory PCB regulatory records. Projects involving remediation or transformer replacements are maintained by the Capital Projects Office. Records pertaining to PCB cleanup, contamination, and ongoing surveys are maintained by EH&S. EH&S routinely reports the progress of the PCB program to the EPA.