

2600SEG218

HANDLING POLYCHLORINATED BIPHENYLS OIL AND EQUIPMENT STANDARD

1.0 PURPOSE

It is the policy of the Panama Canal Authority (ACP) to use safety procedures at work, as well as the appropriate protective equipment to prevent health hazards caused by the exposure to oils and polychlorinated biphenyls equipment. Continuous exposure to PCB produces skin problems such as skin rashes, increased pigmentation, acne, and itching, and it can also cause chronic coughing and bronchitis. Animal studies have shown reproductive problems after chronic exposures to high levels of PCB.

2.0 BACKGROUND

This Standard replaces the safety policy and procedures contained in Appendix C of the Personnel Manual of the former Panama Canal Commission (*PCPM*), Chapter 790.

3.0 SCOPE

This Standard applies to all Panama Canal Authority employees, contractors, and third parties located within the facilities, industrial shops, and areas under ACP responsibility.

4.0 LEGAL BASIS

This Standard is established pursuant to Agreement No. 12 of the Board of Directors of the Panama Canal Authority, Risk Control and Occupational Health Regulations, Chapter I, Articles 8 and 16.

5.0 DEFINITIONS

5.1 PCB: Polychlorinated Biphenyls in concentrations greater than 500 ppm.

5.2 PCB area: Is any space containing a source of PCB that could generate PCB levels greater than the normal permissible exposure levels.

6.0 GENERAL

The intent of the procedures described herein is to ensure the consistency of the safety practices at work for storage, disposition, handling of spills and PCB oils, PCB contaminated oil (50 a 500 ppm) and PCB equipment in different ACP work units. General operations include periodic preventive maintenance and repair of the equipment in direct contact with PCB (i.e. changing transformer connections and caps, changing valve seals and filter cartridges), collecting PCB oil tube samples and their respective analysis and evaluation and other activities that include handling PCB and oils or PCB contaminated materials.

6.1 GENERAL REQUIREMENTS

6.1.1 The PCB area must be designed to contain spills, in case of leaks or spills.

6.1.2 Access to PCB areas must be restricted to authorized personnel

6.1.3 Exits must be labeled, conveniently located, and must open outwards into areas that will suffer minimum contamination in case of an emergency.

6.1.4 Operating instructions must be posted in places where PCB is handled, used or stored.

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6.1.5 PCB must be stored in hermetically sealed containers, protected against physical damage. Temporary storage facilities at the worksite must be isolated from other work areas and must be designed to contain spills within the surrounding area.

6.1.6 When PCB equipment is transported, disconnected, or stored, all valve protective caps must be installed.

6.1.7 When PCB storage containers must be moved, they must be transported and fastened with care to prevent accidents or loss of control.

6.1.8 Ventilation switches and protective equipment must be located outside the PCB area, within easy access, and protected from contamination in case of an emergency.

6.1.9 PCB filtration and dehydration units shall be considered surplus. PCB, or fluids contaminated with PCB must not be processed for reuse.

6.2 AIRBORNE PARTICLE CONTROLS

6.2.1 Outflow from ventilation fans must not represent a danger to other employees.

6.2.2 Ventilation systems must be equipped with manual remote controls and designed to shut off automatically in case of fire in an area with PCB.

6.2.3 The Supervisor of the Safety and Industrial Hygiene Unit (RHSH) shall provide references to verify if the ventilation is adequate.

6.3 PERSONAL PROTECTION MEASURES REQUIRED

6.3.1 Employees that work with PCB must use the following protective equipment:

6.3.1.1. Organic vapor cartridge respirators.

6.3.1.2. Gloves (VITON or better, inspected for defects, before reuse).

6.3.1.3. Disposable overalls (TYVEK laminated with SARANEX).

6.3.1.4. Disposable boot covers (TYVEK laminated with SARANEX).

6.3.1.5. Plastic facemask and goggles as a protection from chemical substance splashes.

6.3.2 Employees must shower before changing into street clothes. If there are no showers available, they must remove all dirty protective clothing; they must temporarily dress with disposable protective clothing until they reach an area where they can shower.

6.3.3 Employees that work with PCB must remove all protective equipment and wash their hands before eating, drinking liquids, smoking or using the toilet.

6.3.4 Eating, drinking liquids, and smoking in areas where there is PCB is not allowed.

6.3.5 If PCB spills on an employee, he or she must remove contaminated clothing and must wash the affected area with soap and water for 15 minutes. If the eyes are affected they must be

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rinsed thoroughly with abundant water, the person must then be sent to the nearest Occupational Health Center or, if after working hours, the employee must be taken to the nearest medical facility for treatment.

6.4 SPILL RESPONSE PROCEDURES

6.4.1 Unit representatives must communicate immediately with RSHS and the Policies and Programs Unit Supervisor (EACG-PP) when PCB leaks or spills are detected. The procedures listed below shall be followed:

6.4.1.1 Only personnel with adequate protective equipment and knowledgeable in emergency procedures shall shut down the sources of PCB, clean the spills, control and repair leaks.

6.4.1.2 Non-essential personnel shall be cleared immediately from the spill or leak areas.

6.4.1.3 The affected area shall be ventilated appropriately to prevent vapor buildup.

6.4.1.4 The decontamination crew of the Maintenance of Facilities and Civil Works Section (OPEM), Locks and Maintenance of Facilities Division, must clean spills in the grounds of ACP facilities.

6.4.1.5 The user unit must clean spills or leaks in the grounds of the operating unit. The decontamination crew of OPEM will be available for cleaning the outdoor area of such spills that require removal of dirt and debris.

6.4.1.6 Cleaning of the equipment and the surface of contaminated walls must be done with absorbent cloth, rags or brushes with kerosene or similar solvents.

6.4.1.7 Cleaning of contaminated soil must include the excavation of all PCB contaminated material (for example dark, wet soil). A sample of the soil must be taken from the excavated area to be analyzed to evaluate the effectiveness of the cleaning operation.

6.4.1.8 If the spilled PCB is in liquid state, it must be collected or absorbed with commercial products intended for this purpose. Vermiculite, dry sand, earth, or similar non-reactive materials are among other authorized optional substances.

6.4.1.9 Work can be resumed only after the repair or replacement, and cleanup of the area has been taken place. The follow-up monitoring shall be coordinated by RSHS.

6.4.1.10 A competent person designated by the unit must certify that the cleanup work has been completed.

6.4.2 ACTIONS IN CASE OF FIRES INVOLVING PCB

6.4.2.1 After detecting a fire, the Protection and Emergencies Response Division (OPP), RSHS, and EACG-PP should be alerted.

6.4.2.2 Only personnel with autonomous helmet respirators may remain in the area until the fire is extinguished.

6.4.2.3 Adequate ventilation must be provided to dissipate the accumulated vapors and smoke after controlling the fire.

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6.4.2.4 The cleaning procedure shall be carried out as per the provisions of section 6.4.1. In addition, walls should be painted once the cleanup is completed.

6.4.2.5 Respirators used in the cleanup when the PCB has been consumed by fire or evaporated shall use organic vapor cartridges with a particle pre-filter. The rest of the protective equipment shall be the same as the one described in section 5.3.1 above.

6.4.3 DISPOSAL OF OILS, AND USED AND CONTAMINATED EQUIPMENT AND MATERIALS

6.4.3.1 Waste from PCB containing equipment and PCB residues shall be collected in appropriate containers, properly labeled and transferred to the designated storage area in coordination with the Sales and Disposal of Excess Goods Unit (FAAD).

6.4.3.2 The user unit must ensure that the transformers are completely drained and placed in platforms to be safely transported and stored.

6.4.3.3 Capacitors that are properly sealed must not leak and must only be placed on loading pallets.

6.4.3.4 Used personal protective equipment shall be placed in plastic bags and labeled before being transferred to FAAD.

6.4.3.5 PCB liquids and liquids contaminated with PCB shall not be mixed with any other liquid for the purpose of diluting them.

6.4.3.6 The user unit shall prepare a Surplus Property Report (Form 6042), attaching a copy of the laboratory report on PCB concentrations.

6.4.3.7 FAAD has the final responsibility for storage and disposal of their PCB material.

6.4.4 SAMPLE COLLECTION AND PCB OIL TESTING

6.4.4.1 Unlabeled PCB shall be considered and handled as if it had high concentrations (greater than 500 ppm).

6.4.4.2 The user unit is responsible for sampling and testing requests for PCB oils, and their classification and appropriate handling. If the user unit does not have trained personnel to collect samples, the Water Quality Unit (EACG-CA), Socio-Environmental Section (EACG), Environmental Division (EAC), can be consulted to provide the necessary assistance.

6.4.5 INSPECTION

6.4.5.1 PCB equipment in operation or PCB equipment stored for reuse shall be inspected at least every 3 months with a minimum of 30 days between inspections. Valves, accessories and connections shall also be checked for leaks when refilling with PCB.

6.4.6 TRAINING

6.4.6.1 Divisions shall provide training to their personnel according to these guidelines. The employees shall be trained to work in potential hazardous cases with PCB and with

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different types of protective equipment required. An RSHH industrial hygienist shall provide technical assistance in basic training sessions to the personnel in charge of training in their units. Contractor shall provide training for their own employees.

6.4.7 FILE MAINTENANCE AND DATA ACCESS

6.4.7.1 Every year the unit that uses or stores these substances shall keep data on PCB (description, locations, volumes, concentrations, inspections). FAAD shall send an annual report that summarizes the disposal of PCB wastes. These reports shall be addressed to the Environmental Division (EAC) and RSHH. The files shall be accessible to employees according to the applicable organizational regulations.

6.4.7.2 The Health, Wellness and Labor Welfare Unit (RHSS) keeps the medical and clinical examination records.

6.4.7.3 The field units must maintain records of training provided to employees.

6.4.7.4 RSHH shall keep monitoring and sample analysis records.

6.4.8 ASSISTANCE FROM INDUSTRIAL HYGIENE

6.4.8.1 Questions on the application of these standards must be referred to an Industrial Hygienist.

7.0 RESPONSIBILITIES

The responsibilities for ensuring compliance with this Standard are described in the Occupational Health and Safety Management Standard 2600SEG101.

8.0 INQUIRIES

Any information or clarification of the content or application of this Standard must be requested in writing to RSHH.

9.0 EXCEPTIONS

Deviations or temporary exceptions regarding compliance with this Standard must be requested in writing to RSHH.

10.0 TERM

This Standard shall remain in effect until revised or amended.

11.0 REFERENCES

11.1 File Retention Tables, File Management Section, ACP.