

CBL Personal Protective Equipment Hazard Control Policy

CBL POLICY

The Chesapeake Biological Laboratory recognizes that certain job activities may place employees at risk to injuries or fatalities. Therefore, CBL strives to minimize or eliminate these risks by utilizing a combination of administrative controls, engineering controls, employee education, application of recommended work practices, and use of personal protective equipment.

Minimum personal protective equipment consists of hand, eye and face protection, body shields, head and foot protection, hearing protection, and respirators. Protection against temperature extremes and/or chemical splashes to the body shall be accomplished through appropriate selection of protective clothing. Engineering controls such as proper use of fume hoods and snorkels shall be the primary means of reducing or eliminating the risk of chemical injuries to personnel.

Hazard assessments have been conducted to determine the minimum PPE requirement for each job or task. Hazard assessments can be found in the CBL safety office or ask your supervisor for a copy.

DUTIES AND RESPONSIBILITIES

The Personnel Office and all Principal Investigators at CBL employing individuals whose job activities place them at risk for exposure to injuries and fatalities have a responsibility to provide training, equipment and medical services as necessary and outlined in this PPE Hazard Control Plan. All costs for equipment and medical services will be the responsibility of the affected Principal Investigator(s) (PIs) or Supervisor. PIs and Supervisors are responsible for the selection, procurement and distribution of all supplies and materials which are necessary to assure compliance with this PPE Hazard Control Plan. PIs and Supervisors are also expected to provide specific work practices training and to maintain copies of training records for insertion into personnel files..

HAZARD ASSESSMENT

Employers are required to assess the workplace to determine if hazards that require the use of personal protective equipment are present or are likely to be present. If hazards or the likelihood of hazards are found, employers must select and instruct affected employees to use properly fitted personal protective equipment suitable for protection from existing hazards.

Employers must certify in writing that a workplace hazard assessment has been performed. All damaged and defective PPE shall not be used and shall be replaced immediately.

The following CBL job classifications and positions have been identified as "at risk" for potential injuries and fatalities:

1. Security - All emergency response personnel who may be expected to assist in rescue, treatment or spill control of hazardous materials shall be considered as having occupational exposure to potential injuries and fatalities.
2. Maintenance Personnel - All maintenance personnel who might have cause for

exposure to potentially injurious or fatal work conditions. These employees will include plumbers, HVAC mechanics, electricians, automotive workers, machinists, preventive or area maintenance mechanics, carpenters, groundskeepers and housekeepers. All assistants to the above groups are included in the requirements for the PPE program.

3. Safety Personnel - All safety personnel who might have cause for exposure to injuries or fatalities shall be under the PPE program. These employees will include the UMCES Radiation Safety Officer and all other personnel charged with fire protection, safety inspections, and hazardous waste management duties.

4. Faculty - All research employees who are involved with experimentation or field research programs must observe the PPE program. These employees shall include the principal investigator(s), laboratory technicians, undergraduate students, graduate students and assistants.

5. Research Fleet Operations - All personnel working on research vessels, including researchers, volunteers, students, and visitors using equipment, must observe the CBL PPE program. Special instructions must be observed for life vests and night time activity.

PPE TRAINING

Before doing work requiring use of personal protective equipment, employees must be trained to know when PPE is necessary; what type is necessary; how it is to be worn; and what its limitations are, as well as know the proper care, maintenance, useful life, and proper disposal of PPE.

Employers are required to certify in writing that training has been conducted and that the employees understand it. Each written certification shall contain the name of each employee trained, the date(s) of training, and identify the subject(s) certified.

PERSONAL PROTECTIVE EQUIPMENT

All employees who are at risk for accidents which could result in injuries or fatalities must wear or use the PPE suited for the task or activity. The following type(s) of protective clothing, depending upon the manner to which an employee may be exposed, are as follows:

Gloves

Arm and hand protection should be offered to prevent such injuries as burns, cuts, electrical shock, amputation, absorption of chemicals and infectious material. Gloves must be worn when there is a possibility for direct hand contact with blood or other potentially infectious body fluids. There are several types of protective gloves available, and selection should be based upon the task being performed:

1. Nitrile or vinyl gloves should be used for operations involving delicate manipulations. These gloves are designed to fit tightly against the skin. The proper size should be selected to fit the worker's hands. Nitrile and vinyl gloves are available either powdered or powder-free. If an employee experiences a skin reaction due to glove use, a hypo-allergenic type must be provided. All such gloves are disposable and may not to be

reused.

2. Polyvinyl chloride (PVC) gloves are also disposable. They do not fit tightly against the skin and should not be used for activities requiring delicate manipulations. PVC gloves may be powdered or powder free, and are available in a variety of sizes. PVC gloves are not to be reused.

3. Rubber, neoprene or other thicker reusable gloves are more durable and are generally used for tasks involving more strenuous activities. Reusable gloves may be re-used by employees if properly decontaminated following contact with potentially infectious materials or other hazardous substances. Reusable gloves should be periodically inspected to ensure there are no cracks, holes or breaks in the material.

4. Leather gloves will provide some protection against abrasions, minor impact, burns, and small cuts. They may be used in conjunction with other hand protection.

5. Stainless steel mesh gloves can be used for sharp-knife work and oyster shucking activities.

6. Electricians gloves should be used only for electrical work. These gloves require special training for inspection and maintenance.

Eyewear

Eye and face protective equipment is required by OSHA where there is a reasonable probability of preventing injury when such equipment is used. Employers must provide a type of protector suitable for work to be performed and employees must use the protectors. These stipulations also apply to supervisors and management personnel, and should apply to visitors while they are in hazardous areas.

Suitable eye protectors must be provided where there is a potential for injury to the eyes or face from flying particles, molten metal, liquid chemicals, acids or caustic liquids or powders, chemical gases or vapors, potentially injurious light radiation, potentially infectious material, or any combination of these.

1. Splash-proof goggles with solid or baffled side shields - must be worn when there is a risk of splashing or aerosolizing of potentially-infectious materials or impact from flying objects or solutions. This protective equipment reduces the risk of fluid entry into the mucous membranes around the eyes or solid objects from impacting the eye.

2. Face shields - will protect the face, eyes, and nose from direct splashes (not from all angles or dripping) and impact from flying objects.

3. Safety glasses with side shields - will provide protection from direct impact of flying objects but does little for fluid splashes or air borne particles.

4. Safety glasses without side shield - provide impact protection from frontal direction only.

5. Welding hoods must protect the eyes from harmful rays and excessive bright light.

6. UV glasses shall protect the eyes from ultraviolet rays both natural and artificial.

Clothing

There are various types of suits, gowns and aprons available for safety purposes. The type of protective clothing selected will depend upon the task and degree of exposure anticipated. Protective clothing should be resistant to fluids, and may be disposable or reusable. Reusable clothing must be properly laundered prior to reuse.

Protective clothing must be worn when there is a risk to the body from heat, cold, splashes from hot or cold metals and liquids, impacts, cuts, corrosives and radiation. Clothing, aprons or lab coats, should be worn when there is a danger of caustic, toxic, or carcinogenic chemical splashes.

It is important to refer to the manufacturers' selection guides for the effectiveness of specific materials against specific chemicals and characteristics for specific protection.

1. Leather gloves will provide some protection against abrasions, minor impact, burns, and small cuts. They may be used in conjunction with other hand protection.

Respirators

Regulations concerning the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, vapors, or in oxygen-deficient environments can be found in Title 29, CFR Part 1910.134.

Selection of a respirator should be made according to the guidelines in the National Institute for Occupational Safety and Health (NIOSH), Respirator Decision Logic, HHS/PHS/CDCDHHS (NIOSH) Publication No. 87-108, May 1987.

Please see the UMCES Safety Officer for this publication or any other assistance you may need regarding the correct choice of a respirator or the proper techniques for fit testing, inspecting, donning, removing, cleaning and storing a respirator.

Torso Protection

Many hazards can threaten the torso: heat, splashes from hot metals and liquids, impacts, cuts, acids, and radiation. A variety of protective clothing and shields are available: cooled, heated and regular vests, jackets, aprons, coveralls, and full body suits of tyvek or other plastic-like materials. Shields can consist of lead, wood, glass and Plexiglas shields. Synthetic materials, such as dacron, should be avoided when hot material work is performed as heat can melt the dacron and cause it to stick fast to the skin; use fire retardant materials when working with hot materials or flammable substance.

Foot & Leg Protection

For protection of feet and legs from falling or rolling objects, sharp objects, molten metal, hot surfaces, and wet slippery surfaces, workers should use appropriate footgaurds, safety shoes, or boots and leggings. Leggings protect the lower legs and feet from molten metal or welding sparks. Safety snaps permit their rapid removal.

Safety shoes should be sturdy and have an impact-resistant toe. In some shoes, metal insoles protect against puncture wounds. Additional protection, such as metatarsal guards, may be found in some types of footwear. Heat-resistant soled shoes protect against hot surfaces like those found in the roofing, paving, and hot metal industries. Safety footwear is classified according to its ability to meet minimum requirements for both compression and impact tests. These requirements and testing procedures may be found in American National Standards Institute standards. Protective footwear must comply with ANSI Z41-1991, American National Standard for Personal Protection-Protective Footwear.

Resuscitation Masks

Personnel who are required to perform Cardiopulmonary Resuscitation (CPR) should have resuscitation masks on hand for use in such an emergency. Most resuscitation masks are disposable and should be handled as contaminated waste following use. Each first-aid kit at CBL contains a disposable resuscitation mask.

Head Protection

Helmets or commonly called "hard hats" must be supplied and worn whenever a worker is exposed to head injury from falling objects, low overhead structures and electrical shock.

Head protection, in the form of protective hats, must do two things:

1. resist penetration and
2. absorb the shock of a blow.

The standards recognized by OSHA for protective hats are contained in ANSI Requirements for Industrial Head Protection, Z89.1-1969, and ANSI Requirements for Industrial Head Protective Helmets for Electrical Workers, Z89.2-1971. Helmets purchased after July 5, 1994, are contained in ANSI Personnel Protection--Protective Headwear for Industrial Workers-Requirements, Z89.1-1986.

There are two Types of protective helmets and three classes; Each helmet should be accompanied by instructions explaining the proper method of adjusting and replacing the suspension and headband. All components, shells, suspensions, headbands, sweatbands, and any accessories should be visually inspected daily for signs of dents, cracks, penetration, or any other damage that might reduce the degree of safety originally provided.

Helmets should not be stored or carried on the rear shelf of an automobile, since sunlight and extreme heat may adversely affect the degree of protection. These helmets can also become a "missile" when stopping in an emergency or involved in a collision with another vehicle.

Hearing Conservation

Exposure to high levels of noise can cause hearing loss or impairment as well as create physical and psychological stress. There is no cure for noise-induced hearing loss, so the prevention of excessive noise exposure is the only way to avoid hearing damage.

Specifically designed protection is required, depending on the type of noise encountered and the auditory condition of employee.

1. Prefomed or molded earplugs should be individually fitted by a professional. Waxed cotton, foam, or fiberglass wool earplugs are self-forming. When properly inserted, they work as well as most molded earplugs.
2. Some earplugs are disposable, to be used one time and then discarded. The non-disposable type should be cleaned after each use for proper protection. Plain cotton is ineffective as a protection against hazardous noise.
3. Earmuffs need to make a perfect seal around the ear to be effective. Glasses, long sideburns, long hair, and facial movements, such as chewing, can reduce protection. Special equipment is available for use with glasses or beards.

Personal Floatation Devices (Life Jackets) A Coast Guard-approved life jacket or buoyant work vest should be used if there is danger of falling into water while working. For emergency rescue operations, boats and ring buoys with at least 90 feet of line must be provided.

Others Night workers and flagmen who might be struck by moving vehicles need suits or vests designed to reflect light.

EXPOSURE INCIDENT EVALUATION

An exposure incident is defined by OSHA as any injury, fatality or disease which could have been avoided if the proper personal protective equipment had been used. If any employee receives such an exposure, it should be reported IMMEDIATELY to the supervisor who shall be responsible for ensuring that an evaluation is made available promptly. An accident report must be filed with the Personnel Office (ext 263) as soon as possible.

The Director's Officer must be notified at phone extension: 364 whenever there is ANY reported exposure incident.

All reported exposure incidents will be investigated to attempt determination of the infectivity of exposure sources. The employee's supervisor is responsible for initiating the investigation after the employee is offered medical assistance, if required. During weekend and evening hours,

TRAINING

All employees who have been issued personal protective equipment must be trained to know when personal protective equipment is necessary; what type is necessary; how it is worn; and what its limitations are, as well as know its proper care, maintenance, useful life, and disposal. Training will be provided by the supervisor. The employer is responsible for providing additional training to employees if there is a change in the manner of expected occupational exposure.

At a minimum, training must include:

- * An accessible copy of the regulatory text of the standard, found in the Safety Office, and an explanation of its content,
- * An explanation of CBL's written PPE Exposure Control Plan and the means by which employees can obtain copies,
- * An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to potentially harmful or fatal injuries,
- * An explanation of the use and limitations of personal protective equipment which will prevent or reduce exposure. Engineering controls, personal protective equipment and appropriate work practices will be discussed,
- * Information about the types, use, location, removal, handling, decontamination and disposal of personal protective equipment,
- * An explanation of the basis for selection of personal protective equipment,
- * Information about the appropriate actions to take and persons to contact in an emergency involving potentially harmful or fatal injuries,

- * An explanation of the procedures to follow if an exposure incident occurs, including the method of reporting incidents and any follow-up and counseling that will be made available to the affected employee(s),
- * Information about post-exposure evaluations and the follow-up responses that the employer is required to provide,
- * An explanation of the signs, labels and color-coding for designation of personal protective equipment, and
- * An opportunity for interactive questions and answers with the persons conducting the training.

WORK PRACTICE CONTROLS

The employer must always insure that the training, equipment and protective clothing referenced in this policy are readily available for use, as needed. The supervisor is responsible for insuring that the equipment is available to the employees. The employees are responsible to wear the correct PPE for the task and to insure its proper fit and maintenance.

RECORD KEEPING

All medical documents pertaining to an employee's work-related injury or fatality will be kept on file in their Worker's Compensation file for seven years. These files are located in the Personnel Office at the Chesapeake Biological Laboratory.

CONCLUSION

Personal protective equipment can be effective only if the equipment is selected based on its intended use, employees are trained in its proper use, and the equipment is properly tested, maintained, and worn.