

## C-11. Personal Protective Equipment

### I. Scope

This program applies to all employees at Frederick National Laboratory for Cancer Research (FNL), (including off-site facilities), who are potentially exposed to hazards in the workplace. Anyone who is required to utilize any form of personal protective equipment (PPE) shall be furnished that equipment by the employer. This equipment shall be appropriate for the task (e.g., safety eyewear including safety glasses, goggles, or face shields; appropriate gloves; fully fastened lab coat and closed-toe shoes; respirators; hearing protectors; safety shoes; and hard hats). Visitors to FNL will be supplied with PPE necessary to provide protection from potential hazards to which they may be exposed.

### II. Purpose

To outline FNL policies and procedures for the provision and use of PPE and assure compliance with Occupational Safety and Health Administration (OSHA) regulations.

### III. Definitions

Personal Protective Equipment - Includes devices and clothing designed to be worn or used for the protection or safety of an individual while in potentially hazardous areas or performing potentially hazardous operations.

Purely Administrative Tasks – Activities such as computer work or paperwork at a desk or other location with no potential exposure to hazardous materials or flying objects.

Eye Hazard Areas – Laboratory rooms, GMP production areas, animal holding rooms, procedure rooms, construction areas, and shops

### IV. General

Accountability for enforcement of this policy is at the first line supervisor level with support from management at all levels. Section VI of this document specifies the minimum levels of PPE that shall be worn in different areas.

- A. To protect employees from potential hazards in the workplace, the employer will provide PPE appropriate to the task. The Environment, Health and

Safety Program (EHS) will assist supervisors in performing risk assessments to determine if hazards that necessitate the use of additional PPE above the basic level are present. Each employer through its supervisors is responsible for obtaining the equipment and enforcing its use.

1. PPE alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, barriers, shields, and other engineering controls along with prudent manufacturing and laboratory practices.
2. Defective or damaged PPE shall not be used.

## V. Responsibilities

### A. Supervisor

1. Evaluates work areas and tasks to determine if hazards that require PPE are present (with assistance from EHS as needed).
2. Ensures PPE is readily available to employees or visitors working in areas or performing operations potentially exposed to hazards.
3. Trains employees on safe donning, doffing, use, and maintenance of safety eyewear, gloves, protective clothing, and steel-toed shoes (EHS assistance upon request).
4. Enforces mandatory use of PPE when required to protect visitor and employee health and safety.
5. Ensures PPE is properly stored and maintained and that employees are properly trained in the proper use of relevant PPE.
6. Completes the FNL New Employee Safety Checklist (including the hazard assessment section), which reviews safety requirements, with all new or newly transferred employees, and returns the completed checklist to EHS within 10 working days. Blank checklists are available for download on the EHS website.

## B. Employees

1. Employees requiring PPE are responsible for completing the appropriate request form(s) and/or documentation. Safety eyewear and safety footwear forms are available on the EHS website.
2. Employees are required to receive documented training on the proper donning, doffing, and use of PPE prior to its use.
3. Use, maintain, and store PPE in accordance with this procedure and instructions provided by this policy, the supervisor, or EHS.
4. Report all problems associated with PPE (i.e., damage, worn, or inadequate) to the supervisor or EHS.
5. Do not use damaged or defective PPE.

## C. Environment, Health & Safety Program (EHS)

1. When requested, assists supervisors in evaluating work areas to determine if hazards that necessitate the use of PPE are present.
2. Ensures PPE issued to employees provides appropriate protection and conforms to applicable standards (i.e., American National Standards Institute, National Institute for Occupational Safety and Health, etc.).
3. Coordinates the provision of training to each individual required to use PPE as described by the FNL Safety and Environmental Compliance Manual. Assist supervisors in training employees as requested.
4. Provides respiratory protection and hearing conservation training for employees enrolled in these programs.
5. Maintains records of completed hazard assessments and EHS-furnished training.

## VI. General Requirements for PPE

### A. Hazard Assessment

OSHA regulation 29 CFR 1910.132 requires an assessment of each work place to determine if hazards are present, or are likely to be present, for which the use of personal protective equipment is needed. At FNL this initial assessment constitutes our policy for the minimum required PPE.

The supervisor is responsible for evaluating work areas to determine if hazards that require additional levels of PPE are present (with assistance from EHS as needed). Sometimes, these additional PPE requirements are outlined as part of the protocol review process for animal study proposals, IBC registrations, Laboratory Specific SOPs, and work using radioisotopes. EHS also provides worksite evaluations of any operation at the request of any supervisor or employee.

1. Laboratories, animal facilities, and GMP production areas: The minimum PPE shall include appropriate safety eyewear (safety glasses, goggles, or face shields), appropriate gloves, fully fastened lab coat or facility clothing, and closed-toe shoes. FNL employees and visitors to these areas shall wear at least this minimum level of PPE at all times, except when engaged in purely administrative tasks.
2. Facilities Maintenance and Engineering (FME):
  - Steel toed footwear is required when conducting maintenance and construction activities.
  - Protective eyewear is required when conducting maintenance and construction activities and also when visiting job sites or shop areas when work is in progress.
  - Face shields are to be worn, in addition to protective eyewear, during cutting, drilling, grinding or sawing activities that have the potential to discharge material onto the employee that might cause a facial injury.
  - Hard hats are required in areas where overhead work is being performed or where materials are being transported overhead by mobile or fixed position cranes.
  - Gloves are to be worn when work activities have the potential to cause injury such as a cut, puncture, burn, or abrasion.

- Hearing protection is required when exposure to noise levels reach 90 decibels or greater in areas such as maintenance shops, utility spaces and construction sites.

## B. Training

Each employee who is required to use PPE is required to be trained and demonstrate the ability to use PPE properly. Training must cover when PPE is necessary, what PPE is necessary, how to don and doff, adjust, and wear PPE, limitations, and proper care of the PPE, maintenance, useful life, and disposal of the PPE. Retraining is required when changes in the work place or types of PPE to be used render previous training obsolete, or if inadequacies in an employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

1. EHS provides training for respirators, bloodborne pathogens, and hearing protection.
2. The supervisor provides training for other types of PPE.

## VII. Eye and Face Protection Program

### A. Definitions and Performance Criteria

1. Eye protection equipment is used to prevent injury to the eyes from flying objects, hazardous chemicals, infectious splashes, or injurious light rays. Such equipment includes safety glasses, chemical splash goggles, laser safety glasses, face shields, welding goggles, and welding face shields
2. Safety glasses consist of prescription or non-prescription lenses in frames with side shield protection conforming to the latest version of the American National Standards Institute (ANSI) Z87.1.
3. Safety glasses with side shields are worn whenever performing any non-administrative work inside of a laboratory, GMP production area, animal facility, and in all facilities maintenance shops or construction area while work is taking place.

4. Chemical splash goggles or safety glasses in conjunction with a face shield are worn whenever the risk of hazardous liquid splash exists.

#### B. Eye Protection Issuance/Replacement

1. Employees who are assigned to jobs, who as a regular part of their job work in eye hazard areas, are eligible to obtain prescription safety glasses at the expense of their employers.
2. The area supervisor (with assistance from EHS) determines the need for and type of additional eye protection required.
3. Prescription safety glasses are provided by the employee's cost center as follows:
  - a. Supervisor submits completed "Request for Safety Eyewear" form to EHS identifying the employee for whom prescription safety glasses are required.
  - b. Once the request is signed by both the employee's supervisor and EHS, the employee is authorized to order from the on-site vendor the desired style of safety glass frames and lenses. Cost for employee requested options (i.e., not specified on the prescription) must be paid by the employee.
  - c. The employee is responsible for providing the vendor a current corrective vision prescription. The fee for the services of this physician and any fitting fees must be paid by the employee. In general, safety glasses may be ordered from a prescription no more than 2 years old.
  - d. Employer-furnished prescription safety glasses damaged by occupational wear will be repaired or replaced at the employee's cost center expense.

#### VIII. Head Protection

Employees working in an area where there is a potential for injury to the head from falling objects, including working below other employees who

are using tools and materials which could fall, will be provided and shall be required to wear protective helmets (hard hats).

A. Definitions and Performance Criteria

Hard hats that conform to the latest version of ANSI Z89.1 are designed to provide protection from impact and penetration hazards caused by falling objects. Some hard hats also provide protection from electrical shock and burns.

B. Head Protection Issuance/Replacement

Replace hard hats per manufacturer's requirements or when the hard hat or suspension is visibly damaged.

IX. Foot Protection

Employees shall use protective footwear when working in facilities maintenance shops, construction areas, laboratories and animal facilities, and other areas where there is a danger of foot injury due to falling or rolling objects, objects piercing the sole, and where such employee's feet are exposed to electrical hazards.

A. Definitions and Performance Criteria

1. Crushing & falling hazards require steel toe safety shoes shall conform to the latest version of ANSI Z41. The inner lining of safety footwear is stamped with the ANSI Z41 identification mark.
2. At a minimum, closed toe shoes are required when working in the laboratory or animal facility. Sandals, flip flops, or any footwear with exposed skin or holes are not permitted in the laboratory.

B. Foot Protection Issuance/Replacement

1. In areas where steel toe safety shoes are required, the employer will provide shoes meeting ANSI Z41 for the employee. Contact EHS to obtain the safety shoe vendor schedule, and to find out the current maximum dollar allowance for safety shoes. A completed

and authorized Safety Footwear Request Form **must** be presented at time of order.

2. Any amount in excess of the maximum dollar allowance shall be the responsibility of the employee.
3. Lost or stolen safety shoes will be replaced at employee expense.
4. Worn or damaged safety shoes will be replaced in accordance with the employee's directorate policy (usually annually).

## X. Hand Protection

Employees whose hands are exposed to hazards such as skin absorption of harmful substances, cuts or lacerations, abrasions, punctures, chemical burns, thermal burns, harmful temperature extremes, radiation contamination, and biohazardous/infectious materials will be provided with and required to wear appropriate hand protection.

### A. Definitions and Performance Criteria

1. The selection of appropriate hand protection is based on the performance characteristics of the various types of glove material, the duration of use, and the hazards associated with the task to be performed. No single glove is protective for all chemicals.
2. For gloves used to protect against chemicals, test data for breakthrough times should be obtained to determine how long the glove can be used and if it can be reused. For use with mixtures, a glove should be selected on the basis of the chemical component with the shortest breakthrough time. Consult manufacturer's glove compatibility charts available online or through EHS.
3. The use of gloves made of latex rubber is discouraged due to the possibility of sensitization (allergy) to allergenic components of latex.
4. Gloves should not be worn in common-use areas or outside laboratory rooms, GMP production areas, animal holding rooms and procedure areas. Common areas include but are not limited to elevators, rest rooms, break rooms, and corridors.

## XI. Protective clothing

Lab coats, animal facility clothing, or other protective garments must be worn when working in laboratories, GMP production areas, and animal facilities. This practice will help prevent exposures to hazardous materials by covering personal clothing and exposed skin. Remove lab coats or other protective garments before leaving the laboratory, GMP production area, or animal facility to help to prevent the spread of contamination into common areas.

### A. Definitions and Performance Criteria

1. Protect clothes and exposed skin by wearing an appropriate fully-fastened laboratory coat or gown with the sleeves rolled down. See Appendix A – Lab Coat Selection and Care.
2. Animal Facility clothing is another form of protective clothing for use inside animal facilities.
3. Facilities Maintenance trades personnel are provided facility clothing compliant with OSHA requirements under their management policies. Welders and electricians are provided flame resistant clothing.

### B. Hazard Assessment

1. Supervisors are responsible for determining whether additional protective garments must be worn to protect employees for the hazards in their areas. Supervisors are encouraged to seek EHS assistance in determining appropriate PPE.
2. Based on this hazard assessment, the appropriate garment shall be determined. For example, for general biochemistry hazards an all-cotton or cotton blend laboratory coat is an appropriate choice. For work with pyrophoric liquids, choose a laboratory coat rated “FR” (flame resistant).
3. The Institutional Biosafety Committee (IBC) registration process may also delineate type and usage of protective garments.

XII. Respiratory Protective Equipment

See Section C-10 Respiratory Protection Program.

XIII. Hearing Protection

See Section C-8 Hearing Conservation Program.

XIV. References

29 CFR 1910.132-138 - Personal Protective Equipment

## Appendix A

### Lab Coat Selection and Care

#### Lab Coat Protection FAQs

- Fabric weight and weave affect how easily material ignites and burns; select tight weave, heavy weight, and tightly-fitted sleeves/cuffs for work with flammables and pyrophorics.
- Launder weekly or earlier if contaminated; use commercial laundry only.
- Cuffed sleeves keep wrists covered and help prevent dipping sleeve in work.
- Closeable lapel is preferred for maximum coverage from hazards.
- Consider sturdy chemical-resistant aprons for high-hazard work such as with pyrophorics, flammables, corrosives, etc.
- Most synthetics resist ignition but once ignited will melt and can cause severe localized burns.
- Blended fabrics often have a high rate of burning combined with fabric melting, but are often most comfortable to wear and economical.

| <b>Fabric Type</b>         | <b>Uses</b>  | <b>Caution</b>   |
|----------------------------|--|--|
| Polyethylene               | Liquid resistant for high-hazard biological materials such as BSL3, or if splash or large volume | Do not use with flammables or pyrophorics                                  |
| Cotton                     | All-purpose  | Heavy weight and weave preferred, liquids absorb                           |
| Polypropylene disposable   | General bench work   | Do not use with flammables or pyrophorics                                  |
| Cotton/poly blend          | General bench work   | Do not use with flammables or pyrophorics                                  |
| Fire-resistant             | Pyrophoric or highly flammable materials   | May need special laundering, wash and replace per manufacturer instruction |
| Neoprene apron and sleeves | Solvents, corrosives   | Clean and dry to allow re-use, replace when damaged                        |

|                         |  |   |
|-------------------------|--|---|
| Tyvek® spun-bond olefin | Biological or particulate, clean rooms | Variable chemical resistance, consider Tychem® for heavy chemical contact |
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The U.S. Army Garrison (USAG) handles the laundry services for the FNL.

All laundry clients are asked to follow the listed process when sending laundry out for cleaning, so as to assist with the tracking:

- The client must fill out a legible laundry ticket.
- Each group needs a laundry bag. A limited number of bags will become available soon and can be obtained by contacting the Logistics Support Department. Beyond a limited number of bags, the purchase (or replacement) of bags will become the responsibility of the program(s).
- Mark a name (personal or program), building and room number on the bag and on each item of laundry (towel, lab coat, scrubs, etc.) with a permanent marker.
- Each bag of laundry must be accompanied with two copies of the “Laundry Ticket” (if there are not two copies of the ticket, the vendor will not pick-up the laundry). The Laundry Ticket is accessible at:  
<http://ncifrederick.cancer.gov/campus/administrative/LaundryTicket.pdf>
- Please maintain a copy of the form for your records.

If you have problems with your laundry, please call the Logistics Support Department. There should be no direct request made to the vendor.

Laundry stops (pick-up and delivery points) need to be kept to a minimum consistent with operational ability. There should be one laundry stop to support multiple offices/programs within the same building.

When a laundry stop is no longer needed, this notification must be in writing and include the date that service should be discontinued if necessary. The notification must be provided to the Logistics Support Department.