Respiratory Protection

**Brief**

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**BRIEF**

**Policy Summary**

The Respiratory Protection Program (RPP) ensures that Berkeley Lab employees and subcontractors are not exposed to respiratory hazards by:

- Reducing or eliminating hazards via engineering and administrative controls
- Dictating personal protective equipment (PPE) when engineering controls are not adequate
- Ensuring that respiratory protection users are using the correct respirator
- Ensuring that respiratory protection users are trained and medically cleared
- Periodically reviewing the RPP for effectiveness

**Who Should Read This Policy**

All persons who will be using respiratory protection while performing work

**To Read the Full Policy, Go To:**

The POLICY tab on this wiki page

**Contact Information**

Respiratory Protection SME
EHSS Division

**Policy**

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**POLICY**

**A. Purpose**

The Respiratory Protection Program (RPP) ensures that Berkeley Lab employees and subcontractors are not exposed to respiratory hazards by:

- Reducing or eliminating hazards via engineering and administrative controls
- Dictating personal protective equipment (PPE) when engineering controls are not adequate
- Ensuring that respiratory protection users are using the correct respirator
- Ensuring that respiratory protection users are trained and medically cleared
- Periodically reviewing the RPP for effectiveness

**B. Persons Affected**

All persons who will be using respiratory protection while performing work.

**C. Exceptions**
D. Policy Statement

Based on identified hazards, the Respiratory Protection Program Administrator maintains and issues respiratory protective equipment when required by Berkeley Lab or used voluntarily. Filtering facepieces (dust masks) and PAPRS, however, are issued by the divisions. (Work Process A)

If radiation hazards are present, a Hazard Evaluation is performed by an Industrial Hygienist and/or a Health Physicist before respiratory protective equipment is issued. (Work Process B)

Prior to being fitted and trained for respirator use, employees required to wear a respirator and voluntary users must be medically evaluated to ensure they are capable of wearing the respirators. No medical evaluations are required for optional filtering facepiece respirators. (Work Process C)

The safe and effective use of respirators with tight-fitting facepieces requires that the respirator be properly fitted to the employee. (Work Process D)

If use of a respirator is required by Berkeley Lab, affected employees will be enrolled in the Respiratory Protection Program and will be subject to all programmatic requirements for respirator issuance, including hazard evaluation, exposure monitoring, applicable cartridge change schedules, medical evaluation, fit testing (for tight-fitting facepieces), training, and annual re-training. (Work Process E and Work Process H)

If use of a respirator is not required by Berkeley Lab, employees may nevertheless choose voluntarily to use a respirator for an extra measure of protection or for personal comfort. (Work Process E)

Employees must follow the requirements listed in the Appendix I, Training Review Guidelines, for use and care of respirators. (Work Process F)

When not in use, respirators must be stored to protect against dust, sunlight, extremes of temperature, excessive moisture, or damaging chemicals. (Work Process F)

In addition to receiving an employee's inspection prior to each use, every respirator must be routinely inspected by the EHSS Industrial Hygiene Group when it is returned to the Industrial Hygiene Lab. Inspections involve examining the straps, hoses, valves, gaskets, mask body, and filters/cartridges, as required.

Defective or worn parts will be replaced.

Parts will not be interchanged between different brands of respirators, as this would void their NIOSH approval.

Field cleaning of respirators is performed by the user by washing the entire respirator (after removing cartridges and filters) with soap and warm water in a clean area on a regular basis. (Work Process G)

Respirator Training, EHS0310, is provided on an as-needed basis, following completion of a Hazard Evaluation by an Industrial Hygienist or a Health Physicist, and successful completion of the Respirator Medical Evaluation by the employee. (Work Process H)

E. Roles and Responsibilities

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<tr>
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<th>Responsibility</th>
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| EHSS Health Services                | • Follows guidance in the most current version of the Health Services Respirator Medical Approval Program  
• Establishes health standards that must be met by all prospective respirator users, as required by 29 CFR 1910.134, ANSI Z88.2, and ANSI Z88.6  
• Requires that respirator users complete a Medical Questionnaire Form, or obtain equivalent information (See Appendix D, Medical Questionnaire for Respirator Users)  
• Performs initial medical examinations on all personnel who will wear respirators, with the exception of employees whose only use of respirators is voluntary use of filtering facepieces (dust masks)  
• Performs follow-up medical examinations, as needed, if:  
  • An employee reports medical signs or symptoms related to his or her ability to wear a respirator  
  • An employee is referred by the EHSS Respiratory Protection Program Administrator, a supervisor, or health-care professional for re-evaluation  
  • Information from the Respiratory Protection Program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation  
  • Changes in workplace conditions (e.g., physical work effort, protective clothing, temperature) may result in a substantial increase in the physiological burden placed on the employee  
• Performs annual medical examinations on all SCBA users  
• Provides a signed approval for those individuals found to be capable of wearing a respirator  
• Notifies the Program Administrator of any restrictions on employee respirator use  
• Maintains records of all required tests and medical history questionnaires  
• Uses only NIOSH-approved respirators, in accordance with the Respiratory Protection Program, in cases when respiratory protection is required to protect health care |
| EHSS Radiation Protection Group     | • Performs appropriate hazard evaluations  
• Provides radiation safety training  
• Develops applicable radiation safety authorization documents  
• Provides all necessary field support services |
Designates a Program Administrator who is qualified by training or experience to oversee the Respiratory Protection Program
Stocks and issues respiratory protective equipment and supplies approved by NIOSH
Maintains equipment for respirator maintenance, fit testing, and cleaning
Assures that the Respiratory Protection Program is reviewed by the RPPA
Assures that the Respiratory Protection Program is audited by a knowledgeable person not directly associated with the program
Reviews contractor submittals, which are submitted to the IH Group, as specified in Appendix A

Perform or review hazard assessments for respirator users
Identify respiratory protection options
Provide respirator and expected-work information to Health Services to support their medical evaluation of respirator users
Conduct respirator training. This includes fit testing, respirator use, storage, and maintenance. Respirator training is required before an employee uses a respirator, and is repeated annually.
Maintain records of respirator training
Inform Health Services of the need to medically re-evaluate employees based on reports from employees, observations during fit testing or program evaluation, or changes in workplace conditions
Regularly evaluate the effectiveness of the Respiratory Protection Program
Follow current version of LBNL/PUB-913E, Environment, Safety, and Health Technical Assurance Program Manual
Investigate instances of respiratory protective equipment malfunction to determine the cause and to identify the appropriate corrective action
Report suspected respiratory protective equipment defects to manufacturer and certifying agency

Complete EHS0318, Respirator Supervisor Training (not required, but recommended for supervisors of filtering facepiece respirators)
Ensure that employees assigned to wear respirators for a given task or job are clean-shaven before respirators are worn
Identify, with the assistance of the EHSS Industrial Hygiene and Radiation Protection Groups, those employees who may need respiratory protective equipment
Ensure that employees required to wear respiratory protective equipment receive the initial and subsequent medical evaluation, fit testing, and training required by the Respiratory Protection Program
Ensure that employees maintain respiratory equipment in a clean and sanitary condition
Ensure that respirators are returned to the Respiratory Protection Program Administrator when employees no longer need the respirator or leave the Laboratory
Ensure that employees receive medical re-evaluations if they report medical signs or symptoms that are related to their ability to use a respirator
Ensure that an employee receives medical re-evaluations if the supervisor or principal investigator feels that the employee needs to be re-evaluated
Ensure that employees receive medical re-evaluations if a change in workplace conditions such as physical work effort, protective clothing, or temperature may result in a substantial increase in the physiological burden placed on them

Maintain as close a shave as necessary to ensure the proper fit of the respirator for health and safety purposes
Use the issued respirator in accordance with this document, the Respirator Training provided by EHSS, and the Training Review Guidelines (Appendix I) provided at each respirator training
Inform his or her supervisor, Industrial Hygiene, or Health Services about any medical signs or symptoms that may be related to respiratory use
Inform his or her supervisor or Industrial Hygiene of changes in workplace conditions that may place an increased physical burden on the employee
Protect respiratory protective equipment from damage or modification and ensure that respirators are not disassembled or altered in any way, other than for cleaning or for the change of cartridges or filters
Keep respirators clean to ensure they are free of contamination that could affect the fit and compromise personal protection
If respirators become contaminated, assure that they are destroyed or cleaned before they are re-used or returned to the Respiratory Protection Program
Report any malfunction of respiratory protective equipment to the Respiratory Protection Program Administrator (RPPA)
Return malfunctioning or damaged respirators to the RPPA for repair or replacement
Use only issued respirators for which he or she is trained and fitted
Use the correct type of respirator and filter cartridge for the hazard involved, and contact Industrial Hygiene or the RPPA if they have questions regarding cartridge selection
Stop work immediately and change filters/cartridges if breathing resistance increases due to filter loading or if chemical breakthrough is detected
Inform his or her supervisor and/or the EHSS Division Liaison when new situations arise where respiratory protective equipment may be necessary
Return respirator to the IH Group in person or through Berkeley Lab mail when respirator use is no longer required or upon leaving employment at Berkeley Lab

F. Definitions/Acronyms

<table>
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<tr>
<td>Air-Purifying Respirator (APR)</td>
<td>A respirator with an air-purifying filter or cartridge that removes specific air contaminants by passing ambient air through the air-purifying element</td>
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<td>Filtering Facepiece (Disposable Dust Mask)</td>
<td>A negative pressure particulate respirator with a filter as an integral part of the facepiece, or with the entire facepiece composed of the filtering medium</td>
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<tr>
<td>Fit Test</td>
<td>The use of a protocol to qualitatively or quantitatively evaluate the fit of a particular respirator to a specific person. A fit test must be repeated annually.</td>
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Hazardous Atmosphere

Any atmosphere, either immediately or not immediately dangerous to life or health, which is oxygen-deficient or which contains a toxic or disease-producing contaminant exceeding Occupational Exposure Limits (OELs) adopted by Berkeley Lab.

High-Efficiency Particulate Air (HEPA) Filter

A filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR Part 84 particulate filters are the N100, R100, and P100 filters. (See P100 Filter)

Negative pressure respirator (tight fitting)

A respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator

NIOSH

National Institute for Occupational Safety and Health. NIOSH provides a testing approval and certification program for respirators, filters and cartridges.

Powered Air-Purifying Respirator (PAPR)

An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements and into the inlet covering

Respirator

A device designed to protect the wearer from the inhalation of harmful atmospheres

Voluntary Use

Situations in which a respirator may be worn for employee comfort but is not necessary (or relied upon) to prevent overexposures

G. Recordkeeping Requirements

None

H. Implementing Documents

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<tr>
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I. Contact Information

Respiratory Protection SME
EHSS Division

J. Revision History

<table>
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<tr>
<th>Date</th>
<th>Revision</th>
<th>By whom</th>
<th>Revision Description</th>
<th>Section(s) affected</th>
<th>Change Type</th>
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<td>H. Toor</td>
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Document Information

Title: Respiratory Protection
Source Requirements Documents

- 10 CFR 851.21(a)(5) — Worker Health and Safety Program; Hazard Identification and Assessment
- 29 CFR 1910.1000, Subpart Z – Occupational Safety and Health Standards, Limits for Air Contaminants
- 10 CFR 851 – Worker Health and Safety Program
- American Conference of Industrial Hygienists (ACGIH), Threshold Limit Values (TLVs)

Other Driving Requirements

ANSI Z88.6 – Respirator, Physical Qualifications for Personnel

Implementing Documents

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Other References

- DOE Guide 440.1-8, Section 3.3.2.1.5 — Implementation Guide for Use with 10 CFR Part 851 Worker Safety and Health Program