Asbestos Hazards and Controls

**BRIEF**

**Policy Summary**

Berkeley Lab's *Asbestos Hazards and Controls* program manages the presence of asbestos-containing material (ACM) at the Laboratory site by:

- Mandating building survey and employee monitoring requirements for asbestos
- Communicating the presence of asbestos and potential exposures via signage and other written communication
- Listing engineering controls, training, and personal protective equipment (PPE) requirements for people and activities that will involve ACM
- Providing removal and repair procedures for ACM

**Who Should Read This Policy**

All Berkeley Lab employees, affiliates, visitors, and subcontractors

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

The POLICY tab on this wiki page

**To Read ES&H Program Details, Go To:**

http://www.lbl.gov/ehs/pub3000/CH36.html

**Contact Information**

Asbestos Subject Matter Expert
Industrial Hygiene Group
EHSS Division

**POLICY**

**A. Purpose**

Lawrence Berkeley National Laboratory's (Berkeley Lab's) *Asbestos Hazards and Controls* program manages the presence of asbestos-containing material (ACM) at the Laboratory site by:

- Mandating building survey and employee monitoring requirements for asbestos
- Communicating the presence of asbestos and potential exposures via signage and other written communication
- Listing engineering controls, training, and personal protective equipment (PPE) requirements for people and activities that will involve ACM
- Providing removal and repair procedures for ACM
B. Persons Affected

All Berkeley Lab employees, affiliates, visitors, and subcontractors

C. Exceptions

None

D. Policy Statement

1. Asbestos-containing materials can be divided into two general categories: friable and nonfriable. Review hazards and controls for asbestos in Work Process A.

2. For guidance on the identification of asbestos-containing materials, review Work Process B. Examples of materials that have been manufactured with asbestos:
   a. Cement/asbestos panels and pipes (transite)
   b. High-temperature gaskets
   c. Pipe insulation (block, corrugated, air cell, etc.)
   d. Mastic for vinyl flooring
   e. Vinyl floor tiles and sheet vinyl flooring
   f. Wallboard (Sheetrock)
   g. Electric wiring insulation
   h. Taping or joint compounds
   i. Spray-applied fireproofing and insulation
   j. Roofing felt/shingles/flashings
   k. Automotive brake linings and pads
   l. Ceiling tiles
   m. Fire-resistant gloves, clothing
   n. HVAC duct insulation and tape
   o. Linoleum and other resilient flooring
   p. Paint
   q. Fire doors
   r. Window putty
   s. Plaster/stucco
   t. Elevator/crane brake shoes

3. Personnel must be trained according to requirements prior to working with ACM (Work Process C).

4. Removal of thermal system insulation (TSI) or surfacing material greater than one glove bag is Class I asbestos work. Removal of ACM other than TSI or surfacing materials is Class II asbestos work. Examples of this type of work include the removal of roofing, flooring, mastics, gaskets, transite, wallboard, etc. See Work Process D for Class I and Class II requirements.

5. Repair and maintenance activities that disturb ACM (or PACM) are Class III asbestos work (Work Process E). Class III includes TSI and surfacing material and the cleanup of ACM dust or debris. The amount disturbed must fit in one glove bag or waste bag less than 60 inches in width.

6. Maintenance and repair work involving ACM or presumed asbestos-containing material (PACM) is Class IV asbestos work (Work Process F).

7. Dispose of all removed ACM as hazardous waste (Work Process G).

8. File all reports and testing paperwork according to Work Process H.

E. Roles and Responsibilities

<table>
<thead>
<tr>
<th>Roles</th>
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<tbody>
<tr>
<td>Building Managers</td>
<td>Notify the EHSS Division of suspected or known ACM that may pose a health hazard</td>
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</table>
| Environmental Protection Group | • Submits written notification to the Bay Area Air Quality Management District (BAAQMD) at least 10 working days in advance of all demolitions (notification must be given at all times, even when ACM is not present) and renovations involving removal of regulated asbestos-containing material (RACM) greater than or equal to 100 linear feet, 100 ft² or 35 ft³, unless the notification is completed by a subcontractor performing the work.  
  • Submits written notifications to the BAAQMD of cumulative renovations (during a calendar year) that involve reportable amounts of RACM. (Note: This is a shared responsibility with Facilities, the Environmental Protection Group (EPG), and Industrial Hygiene.)  
  • Prepares written requests to the BAAQMD for approval of alternate removal methods, such as dry removals |

Lawrence Berkeley National Laboratory. The official or current version is located in the online LBNL Requirements and Policies Manual. Printed or exported versions are not official. Users are responsible for working with the latest approved revision.
Facilities Division

- Maintains ACM to prevent employee exposures and releases to the environment
- Reviews specifications for large-scale abatement projects and associated compliance plans involving the large-scale disturbance of ACM.
- Ensures buildings and equipment are surveyed for ACM prior to demolitions and renovations. (Note: This is a dual responsibility shared with Facilities.)
- Ensures industrial hygiene services are budgeted for large-scale asbestos abatement projects. This is to provide day-to-day on-site industrial hygiene oversight for the project.
- Includes site-specific contract specifications for large-scale asbestos abatement projects
- Notifies the Industrial Hygienist and/or Environmental Protection of every demolition, whether or not it involves asbestos, and every removal of RACM prior to starting.
- Ensures that contract specifications are followed by abatement contractors. (Note: This is a shared responsibility with Industrial Hygiene.)
- Submits copies of all contractor air-monitoring results to an EHSS Industrial Hygienist
- Notifies an EHSS Industrial Hygienist of all asbestos abatement projects involving Class I & II work verbally as far in advance as feasible
- Performs asbestos abatement or encapsulating work in accordance with Work Process D and Work Process E, as applicable, of this program
- Ensures Facilities employees performing work with ACM or potentially exposed to asbestos at a concentration above the PEL or excursion limit have current training appropriate for the type of asbestos work they are performing.
- Obtains written approval from an EHSS Industrial Hygienist prior to purchasing new ACM.

EHSS Industrial Hygienist

- Reviews specifications for large-scale abatement projects and associated compliance plans involving the large-scale disturbance of ACM.
- Ensures buildings and equipment are surveyed for ACM by Facilities or contract consultants prior to demolitions and renovations. (Note: This is a dual responsibility shared with Facilities.)
- Performs representative personal air monitoring and area air monitoring (e.g., clearance sampling) as appropriate for asbestos abatement work involving Berkeley Lab employees. Notifies the employee and the employee's supervisor of the results in writing within five working days of receipt.
- Performs quantitative respirator fit tests annually for employees routinely involved with asbestos abatement work. (Note: Given the limited amount of asbestos work performed by asbestos-trained employees in Facilities, employee fit tests may not be current. In these cases, asbestos work may not be performed until the fit test is made current again.)
- Provides consultation and inspection for: Environmental Protection Agency (EPA)-approved Building Inspector/Management Planner, Contractor/Supervisor, Project Designer, with current certification. Note: Certified Industrial Hygienists do not have to attend the Building Inspector course (29 CFR 1926.1101[i][ii][B]).
- Requires facilities employees performing asbestos work comply with Berkeley Lab's Asbestos Hazards and Controls program and 29 CFR 1926.1101. Also ensures employees handling asbestos, or who may be exposed to asbestos at or above the PEL or excursion limit, have received required training.
- Ensures proper packing and loading of ACM onto transport vehicles
- Provides consultation and inspection for: Environmental Protection Agency (EPA)-approved Building Inspector/Management Planner, Contractor/Supervisor, Project Designer, with current certification. Note: Certified Industrial Hygienists do not have to attend the Building Inspector course (29 CFR 1926.1101[i][ii][B]).

Health Services Group

Provides, as necessary, complete asbestos physical examinations as described in 29 CFR 1926.1101 or 29 CFR 1910.1001 for Berkeley Lab employees who may be enrolled in the asbestos medical surveillance program

Supervisors of employees who routinely work with or may disturb ACM

- Ensure employees are provided the appropriate protective clothing and respiratory protection
- Ensure employees conduct asbestos work comply with Berkeley Lab's Asbestos Hazards and Controls program and 29 CFR 1926.1101. Also ensure employees handling asbestos, or who may be exposed to asbestos at or above the PEL or excursion limit, have received required training.
- Ensure appropriate employees receive medical surveillance if necessary.

Waste Management Group

- Provides assistance with labeling, storage, and disposal requirements for ACM.
- Selects a Department of Toxic Substances Control (DTSC)-approved disposal site for all RACM and asbestos-contaminated waste material. (Note: DTSC approvals are not required for non-RACM materials, including undamaged floor tiles and Sheetrock containing less than 1% asbestos by point counting analysis.)
- Ensures proper packing and loading of ACM onto transport vehicles
- Ensures vehicles transporting RACM and asbestos-contaminated waste materials (e.g., clothing and equipment) are placarded in compliance with BAAQMD Rule 11-2-304.5, and that waste shipment records comply with BAAQMD Rule 11-2-502.
- Manifests RACM and asbestos-contaminated waste materials from Berkeley Lab to disposal site
- Maintains disposal records.
- Ensures Hazardous Waste Handling Facility employees who handle asbestos-containing waste are adequately trained.
- Provides the Facilities Division with necessary waste-disposal information prior to abatement projects

F. Definitions/Acronyms

See the Asbestos Hazards and Controls program for technical terms related to the details of this policy and its implementation.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ACM (asbestos-containing material)</td>
<td>Building materials that contain asbestos in an amount greater than 1.0% by weight, area, or count</td>
</tr>
<tr>
<td>Asbestos</td>
<td>A generic term referring to naturally occurring fibrous mineral silicates. The three most common types are chrysotile (white) asbestos,amosite (brown) asbestos, and crocidolite (blue) asbestos.</td>
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<tr>
<td>BAAQMD</td>
<td>Bay Area Air Quality Management District</td>
</tr>
<tr>
<td>Class I Asbestos Work</td>
<td>Activities involving the removal of thermal system insulation (TSI) and surfacing ACM</td>
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<tr>
<td>Class II Asbestos Work</td>
<td>The removal of asbestos-containing wallboard, floor tile, roofing materials, transite, construction mastic, gaskets, etc. This does not involve the removal of TSI or surfacing materials.</td>
</tr>
<tr>
<td>Class III Asbestos Work</td>
<td>Activities involving repair and maintenance operations where ACM (including TSI and surfacing materials) are likely to be disturbed. The amount removed must fit into one glove bag or waste bag less than 60 inches in width.</td>
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<td>Class IV Asbestos Work</td>
<td>Maintenance or custodial activities in which employees contact ACM or PACM, and activities to clean up waste and debris containing ACM and PACM</td>
</tr>
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<td>Friable ACM</td>
<td>A material containing asbestos that can be crumbled, pulverized, or reduced to a powder when dry, under hand pressure, or that has been crumbled, pulverized, or reduced to a powder</td>
</tr>
<tr>
<td>Nonfriable ACM (Category I)</td>
<td>Intact asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products</td>
</tr>
<tr>
<td>Nonfriable ACM (Category II)</td>
<td>Asbestos-containing material (excluding Category I) that when dry and in its present form, cannot be crumbled, pulverized, or reduced to powder by hand pressure. This includes asbestos cement products, transite board, pipe, plaster, stucco, paint, and mastics.</td>
</tr>
<tr>
<td>PACM (presumed asbestos-containing material)</td>
<td>Material that may contain asbestos and has not been sampled for asbestos content. It should be assumed to contain asbestos and treated accordingly.</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Level</td>
</tr>
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</table>
| RACM (regulated asbestos-containing material) | • Friable ACM  
• Nonfriable Category I ACM that has or will become friable, or that has been subjected to sanding, drilling, grinding, cutting, or abrading  
• Nonfriable Category II ACM that may become crumbled, pulverized, or reduced to powder by the forces expected to act upon the material in the course of demolition or renovation |
| TSI (thermal system insulation) | Insulation applied to pipes, fittings, boilers, ducts, etc., to prevent heat loss or gain |

### G. Recordkeeping Requirements

The Industrial Hygiene Group maintains the following records:
- Bulk sampling
- Employee notification
- Exposure monitoring
- Asbestos training

### H. Implementing Documents

<table>
<thead>
<tr>
<th>Document number</th>
<th>Title</th>
<th>Type</th>
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<tbody>
<tr>
<td>07.07.002.001</td>
<td>Asbestos Hazards and Controls</td>
<td>Program</td>
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<tr>
<td>07.07.002.002</td>
<td>Work Process A, General Requirements</td>
<td>Process</td>
</tr>
<tr>
<td>07.07.002.003</td>
<td>Work Process B, Asbestos Identification Process</td>
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I. Contact Information

Asbestos Subject Matter Expert
Industrial Hygiene Group
EHSS Division

J. Revision History

<table>
<thead>
<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>1/2/2012</td>
<td>0</td>
<td>R. Connelly</td>
<td>Rewrite for wiki (brief)</td>
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<tr>
<td>5/15/2013</td>
<td>1</td>
<td>R. Ronnelly</td>
<td>Rewrite for wiki (policy)</td>
<td>All</td>
<td>Minor</td>
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Document Information

DOCUMENT INFORMATION

Title: Asbestos Hazards and Controls

Document number 07.07.002.000

Revision number 1

Publication date: 5/15/2013

Effective date: 5/15/2013

Next review date: 5/15/2016

Policy Area: Industrial Hygiene and Safety

RPM Section (home) ESH

RPM Section (cross-reference) None

Functional Division EHSS

Prior reference information (optional) PUB-3000 Section 4.8 moved to Chapter 36

Source Requirements Documents

- 8 CCR 1529, Asbestos
- BAAQMD, Regulation 11, Rule 2, Asbestos Demolition, Renovation and Manufacturing
- 29 CFR 1926.32, Definitions
- 29 CFR 1910.1001, Asbestos Occupational Safety and Health Standards, Department of Labor, General Industry
- 29 CFR 1926.1101, Asbestos Safety and Health Standards for the (formerly 1926.58) Construction Industry, Department of Labor
- 40 CFR 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), Environmental Protection Agency (EPA)
- 40 CFR Part 763, Subpart E (guidance), Asbestos Hazard Emergency Response Act (AHERA) — EPA regulations for schools

Other Driving Requirements

- Title 22, California Code of Regulations, Article 18 Land Disposal Restrictions, California Department of Toxic Substances Control (DTSC). http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/OEARA_REG_Title22_Ch18.cfm

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<td>Work Process H, Reports and Tests</td>
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<td>07.07.002.010</td>
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