Transporting and Shipping Hazardous Materials

Brief

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<th>Title:</th>
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<tr>
<td>Publication date:</td>
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BRIEF

Policy Summary

Berkeley Lab transports hazardous materials in accordance with U.S. Department of Transportation (DOT) requirements (specifically 49 CFR Parts 171–180 and 350–399) as required by U.S. Department of Energy (DOE) Order 460.1, *Packaging and Transportation Safety.* Where Berkeley Lab deviates from DOT requirements, Berkeley Lab will generate an approved Transportation Safety Document as required by DOE and/or obtain a Special Permit from DOT to specifically authorize the deviation.

Who Should Read This Policy

Berkeley Lab employees, visitors, affiliates, and subcontractors who use, and need to transport, hazardous materials, excluding radioactive materials and hazardous waste

To Read the Full Policy, Go To:

The POLICY tab on this wiki page

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

http://www.lbl.gov/ehs/pub3000/CH54/CH54.html

Contact Information

For assistance with programmatic issues, go to:
Transportation Policy: Hazardous & Nonhazardous Materials SME EHS Division

For assistance with shipping, go to:
Facilities Division Shipping Department shipping@lbl.gov

For assistance with Receiving, go to:
Facilities Division Receiving Department receiving@lbl.gov

Policy

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POLICY

A. Purpose
This policy describes the governing rules and restrictions for workers who need to transport hazardous materials in a vehicle or need to ship hazardous materials. Hazardous materials in this policy are those materials that meet the U.S. Department of Transportation's definition of hazardous material, or "substances or materials that the U.S. Secretary of Transportation has determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce." It excludes transportation of radioactive materials and hazardous wastes, which are addressed by other Berkeley Lab documents.

B. Persons Affected

Berkeley Lab employees, visitors, affiliates, and subcontractors who use and need to transport hazardous materials, excluding radioactive materials and hazardous wastes

C. Exceptions

Transportation and shipping of radioactive materials and hazardous wastes

D. Policy Statement

Berkeley Lab transports hazardous materials in accordance with U.S. Department of Transportation (DOT) requirements (specifically 49 CFR Parts 171–180 and 350–399) as required by U.S. Department of Energy (DOE) Order 460.1, Packaging and Transportation Safety, Where Berkeley Lab deviates from DOT requirements, Berkeley Lab will generate an approved Transportation Safety Document as required by DOE and/or obtain a Special Permit from DOT to specifically authorize the deviation.

All shipments of hazardous materials are processed by Facilities Shipping or Advanced Light Source (ALS) Shipping. Trained and certified hazardous materials (hazmat) employees prepare hazardous materials for shipment, and generate and sign associated shipping declarations. Employees not trained and certified as hazmat employees must not offer hazardous materials for shipment.

Self-transportation of hazardous materials by Berkeley Lab workers conforms to DOT's materials of trade (MOT) exclusion within the Hazardous Materials Regulation. Employees who have completed a Job Hazards Analysis (JHA) and the minimum requirement of reviewing a safety briefing are authorized to self-transport hazardous materials in a vehicle. Where MOT exclusions cannot be met, transportation is performed by trained and certified hazmat employees in compliance with DOT rules or an approved Berkeley Lab Transportation Safety Document.

1. General requirements and a Process Flow Diagram are provided in Work Process A.
2. Hazardous materials shipped to Berkeley Lab are received at a central Receiving facility. Receiving staff inspect incoming packages of hazardous materials for damage according to internal procedures (see Work Instruction—Site Services Group, Exception Policy [All Received Material]). Damaged packages are managed according to those procedures. (Work Process B)
3. Staff may hand-carry or self-transport hazardous materials by hand and foot between buildings and between laboratories separated by hallways within a single building, provided it is safe to do so and can be done without spilling the material. Before handling hazardous materials, staff are required to take EHS0348, Chemical Hygiene and Safety training, or an equivalent course relevant to the hazardous material as determined through the worker's Job Hazards Analysis (JHA). (Work Process C)
4. Staff may personally move or self-transport small quantities of most hazardous materials by vehicle. Self-transportation has two categories:
   1. Those hazardous materials that are required to be transported under the full requirements of DOT (including training, vehicle placarding, shipping declarations, etc.)
   2. Those hazardous materials that can be self-transported in small quantities under less-restrictive DOT requirements (referred to as the MOT exception). (Work Process D)
5. Specific instruction is provided for the following categories of hazardous materials transportation:
   1. Biological & Infectious Substances (Work Process D.1)
   2. Compressed Gases (Work Process D.2)
   3. Chemicals (Work Process D.3)
   4. Cryogens (Work Process D.4)
   5. Dry Ice (Work Process D.5)
   6. Engineered Nanomaterials (Work Process D.6)
   7. Gasoline (Work Process D.7)
   8. Lithium Batteries (Work Process D.8)
   10. Facilities Transportation (Work Process D.10)
6. Shipping of hazardous materials is subject to DOT regulations as well as other regulatory restrictions (such as International Air Transport Association [IATA] or International Civil Aviation Organization [ICAO] regulations) and commercial carrier restrictions (such as those imposed by FedEx, UPS, etc.). As stated, it is Berkeley Lab policy to follow all applicable shipping requirements.
   1. Only trained Shipping staff may package hazardous materials for shipment. Shipping staff are trained to DOT requirements and follow packaging instructions provided by DOT, IATA, and other applicable organizations when packaging hazardous materials for shipment. (Work Process E)
7. Self-transport of hazardous materials to and from the field follows the same requirements documented in this program. Shipping to the field follows the normal shipping process at Berkeley Lab.
   1. If hazardous materials must be shipped from the field, contact Shipping (ext. 5094, ext. 4388, or shipping@lbl.gov) as early as possible to plan for this activity. (Work Process F)
8. Drivers transporting hazardous materials must take specific actions in the event of a release. (Work Process G)
9. Both Facilities Transportation and Shipping use specific packaging materials to package, transport, and ship hazardous materials. This packaging is identified by the UN specification marking on the exterior of the packaging materials. (Work Process H)
10. Berkeley Lab does not allow storage of hazardous materials at off-site storage facilities. (Work Process I)
11. Training is required for employees who, during the course of their work, directly affect hazardous materials transportation safety (Work Process J). This includes employees who:
   1. Load, unload, or handle hazardous materials to or from vehicles that enter highway commerce
   2. Inspect, mark, maintain, recondition, repair, or test a package, container, or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous materials in commerce
   3. Prepare hazardous materials for transportation in commerce
   4. Are responsible for safety of transporting hazardous materials in commerce
   5. Operate a vehicle used to transport hazardous materials

12. Security of hazardous materials transportation and shipping is addressed in the Berkeley Lab Facilities Division Site Logistics Department Security Plan (Shipping, Receiving, Transportation), November 2008 (Work Process K).

E. Roles and Responsibilities

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<tr>
<th>Roles</th>
<th>Responsibilities</th>
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| Receiving                          | • Loads, unloads, and handles hazardous material packages  
                                       • Inspects packages for damage as they are received  
                                       • Manages damaged packages per Work Instruction – Site Services Group, Exception Policy (All Received Material)  
                                       • Per DOT standards, transports unopened hazardous material packages (excluding radioactive materials) to their destination at either on-site or off-site Berkeley Lab facilities |
| Shipping                           | • Loads, unloads, and handles hazardous material packages  
                                       • Prepares hazardous materials for transportation (excluding radioactive materials and hazardous wastes, which are prepared by the Radiation Protection Group and Waste Management)  
                                       • Inspects packaging material prior to shipment to ensure it meets applicable requirements and is in good condition |
| Transportation                     | • Upon request, packages hazardous materials to DOT standards and transports them to their requested destinations, including on-site and off-site Berkeley Lab facilities  
                                       • Inspects packaging material prior to transportation to ensure it meets applicable requirements and is in good condition |
| Staff (self-transporting hazardous materials) | • Adhere to hazardous materials transportation requirements in this document  
                                       • Modify JHA to indicate self-transportation and incidental involvement in shipping of hazardous materials, as applicable  
                                       • Complete required training courses |

F. Definitions and Acronyms

<table>
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<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>On site</td>
<td>Within the fenced boundaries of the main Berkeley Lab facility; also known as the Hill site</td>
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<td>Self-transport</td>
<td>The process whereby an individual personally moves hazardous materials from one Berkeley Lab work location to another (e.g., from building to building) either by hand-carrying or by vehicle. Self-transport is used interchangeably with &quot;moving&quot; or &quot;on-site transfer.&quot; This includes Berkeley Lab employees who move hazardous materials to off-site locations.</td>
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<tr>
<td>Shipping</td>
<td>Moving hazardous materials from Berkeley Lab to another location when shipping papers (e.g., shipping orders, bills of lading, manifests, etc.) are required. This typically applies when Berkeley Lab pays a commercial carrier such as FedEx to move hazardous materials on the Laboratory's behalf, but it may apply to Laboratory staff in specific situations.</td>
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G. Recordkeeping Requirements

Shipping declarations must be maintained for at least one year.

H. Implementing Documents
Other References

- Berkeley Lab Facilities Division – Procedure LOGIS-007, Shipping – Domestic and International Shipments
- Berkeley Lab Facilities Division – Site Logistics Department Security Plan (Shipping, Receiving, Transportation), November 2008
- Work Instruction – Site Services Group, Exception Policy (All Received Material)
- Berkeley Lab EHS Waste Management Group and Operational Health Physics Group, Transportation Safety Document, Rev. 1, January 18, 2006
- PUB-3000, Chapter 2, Biosafety
- PUB-3000, Chapter 4.7, Chemicals
- PUB-3000, Chapter 7, Pressure Safety and Cryogenics
- PUB-3000, Chapter 29, Safe Handling of Cryogenics
- PUB-3000, Chapter 21, Radiation Safety
- PUB-5341, Chemical Hygiene and Safety Plan
- Biosafety Manual
- Special Permit Authorization DOT-SP 12998, Expiration March 31, 2014

I. Contact Information

For assistance with programmatic issues, go to: Transportation Policy: Hazardous & Nonhazardous Materials SME EHS Division

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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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<tr>
<td>1/2/2012</td>
<td>0</td>
<td>N. Rothermich</td>
<td>Rewrite for wiki (Brief only)</td>
<td>All</td>
<td>Minor</td>
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<tr>
<td>8/30/2013</td>
<td>1</td>
<td>A. Peterson</td>
<td>Consolidation of program requirements; Rewrite for wiki</td>
<td>All</td>
<td>Major</td>
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Document Information

**DOCUMENT INFORMATION**

**Title:** Transporting and Shipping Hazardous Materials
Source Requirements Documents

- DOT 49 CFR 171, Transportation – General Information, Regulations, and Definitions
- DOE Order 460.1B, Packaging and Transportation Safety

Implementing Documents

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<tr>
<th>Document Number</th>
<th>Title</th>
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<tr>
<td>07.10.001.001</td>
<td>Transporting and Shipping Hazardous Materials</td>
<td>Program</td>
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<tr>
<td>07.10.001.002</td>
<td>Work Process A, Process Flow Diagram</td>
<td>Process</td>
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<td>Work Process B, Receiving and Delivery</td>
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<td>Work Process C, Hand-Carrying or Self-Transport by Hand and Foot</td>
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<td>Work Process D, Self-Transport by Vehicle</td>
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<td>Work Process E, Shipping</td>
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<td>Work Process F, Field Work</td>
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<td>Work Process I, Off-Site Storage</td>
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