Waste Management

Brief

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BRIEF

Policy Summary

The Waste Management Program at Berkeley Lab defines generator accumulation processes and ensures compliance with all laws and regulations governing the disposal of:

- Hazardous waste
- Radioactive waste
- Medical/biohazardous waste
- Mixed waste
- Universal waste

Who Should Read This Policy

Berkeley Lab employees, visitors, affiliates, and subcontractors who generate these types of wastes

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/CH20.html

Contact Information

Waste Management Group
EHS Division
mmkassis@lbl.gov

Policy

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A. Purpose

This policy provides general requirements for the management of the following types of wastes:

- **Hazardous waste**: Wastes that are regulated by the U.S. Environmental Protection Agency (EPA) or the state of California as hazardous.
- **Radioactive waste**: Wastes that contain radioactivity that is distinguishable from background or that have been induced to be radioactive. Radioactive waste can be solid or liquid.
- **Mixed waste**: Waste containing both hazardous and radioactive components.
- **Medical/biohazardous waste**: Waste that requires inactivation of the biological material in an approved manner prior to final disposal.
- **Universal waste**: Wastes that are regulated by the EPA or the State of California but are not fully regulated as hazardous wastes and are subject to Standards for Universal Waste Management.

B. Persons Affected

Lawrence Berkeley National Laboratory (Berkeley Lab) employees, visitors, affiliates, and subcontractors who generate these waste types.

C. Exceptions

This policy does not apply to solid or liquid sanitary wastes.

D. Policy Statement

The Waste Management Program at Berkeley Lab provides assistance in managing all waste types in compliance with applicable regulations and DOE orders.

D.1 Hazardous, Radioactive, Mixed, Medical Waste/Biohazardous, and Universal Waste Guidelines at Berkeley Lab (Work Process A)

Waste generators are responsible for the accurate and complete characterization of their wastes, for compliant management of waste in the workplace, and for minimizing the amount of waste generated. Consult the following publications and your Generator Assistant for additional information:

- PUB-3092, *Guidelines for Generators to Meet HWHF Acceptance Requirements for Hazardous, Radioactive, and Mixed Wastes at Berkeley Lab*
- PUB-3093, *Guidelines for the Management of Waste Accumulation Areas (WAAs) at Berkeley Lab*
- PUB-3095, *Medical and Biohazardous Waste Generator's Guide* (part of the Biosafety Program)

D.2 Storing Waste at the Site of Generation (Work Process B)

All generators are required to set up special waste storage areas and follow all regulations while the waste is in the generator area, including:

- Ensuring that only the maximum volumes allowed for any particular hazardous-waste stream are stored
- Ensuring that incompatible wastes are segregated and separated according to their hazard category
- Ensuring that ignitable wastes are accumulated in accordance with the National Fire Protection Association (NFPA) and Occupational Safety and Health Administration (OSHA) safety guidelines and are stored in the appropriate containers.
- Maintaining adequate primary and secondary containment
- Ensuring that every container of hazardous waste is properly and compliantly labeled and packaged
- Storing waste within allowable time frames

Specific waste storage areas include:

- Satellite Accumulation Areas (SAAs)
- Mixed Waste Satellite Accumulation Areas (MWSAAs)
- Waste Accumulation Areas (WAAs)
- Solid medical and biohazardous waste is stored and managed at the generator's site according to the guidance in the *Medical and Biohazardous Waste Generator's Guide*.
Biohazardous Waste Generator's Guide.

- Radioactive waste is accumulated and managed at generator areas in accordance with all applicable work authorizations.

E. Roles and Responsibilities

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<th>Roles</th>
<th>Responsibilities</th>
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</table>
| Waste generators                     | • Complete all appropriate training  
• Accurately and completely characterize their wastes for compliant management within their workplaces  
• Meet Hazardous Waste Handling Facility (HWHF) acceptance requirements  
• Reduce waste through prevention, minimization, and recycling |
| EHS Waste Management Group           | • Assists generators in all aspects of managing wastes, including characterization, labeling, packaging, and safe and compliant management in the workplace  
• Ensures that generators have properly characterized their waste and have correctly packaged and labeled the waste before it is picked up  
• Removes all hazardous and mixed waste from the generator's site in a safe and timely manner  
• Operates the HWHF in a manner that ensures safety and compliance with all applicable regulations  
• Ensures that all off-site facilities used for the treatment and disposal of radioactive, mixed, and hazardous wastes have been reviewed and approved for waste-handling activities  
• Prepares all waste profiles and shipping documents  
• Tracks waste from the time it is generated, received at the HWHF to its final disposition in a treatment, storage, and disposal facility (TSDF).  
• Maintains all waste records  
• Transports hazardous material in accordance with the HazMat Transport/Shipping guidelines  
• Providing classroom or one-on-one waste generator–related training |

F. Definitions and Acronyms

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<th>Term</th>
<th>Definition</th>
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| Biohazardous waste      | Waste that requires biological inactivation in an approved manner prior to final disposal, and includes, but is not limited to, the following discarded items:  
• Primary human cell lines and tissue cultures  
• Organisms with recombinant DNA  
• Cultures and stocks of infectious agents  
• Potentially infectious agents (e.g., bacteria, viruses, fungi, spores)  
• Toxins  
• Live and attenuated vaccines  
• Blood, blood products, and other potentially infectious materials that may contain human blood-borne pathogens  
• Carcasses  
• Tissue specimens  
• Recognizable human or animal body parts  
• Soil, plants, and pathogens controlled by the U.S. Department of Agriculture (USDA)  
• Labware (not defined as a sharp) that has come into contact with the aforementioned waste streams (e.g., contaminated plastic pipettes, pipette tips, petri dishes, centrifuge tubes, Eppendorf tubes, disposable gloves, and wipes) |
<p>| Extremely hazardous waste| Any hazardous waste or mixture of hazardous wastes that, if human exposure should occur, may likely result in death, disabling personal injury, or serious illness because of its quantity, concentration, or chemical characteristics (22 CCR 66260.10) |</p>
<table>
<thead>
<tr>
<th>Hazardous waste</th>
<th>Any solid waste that exhibits one or more of the characteristics of &quot;hazardous waste&quot; (22 CCR 66261.21-66261.24, 40 CFR Part 261.3). These criteria are:</th>
</tr>
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|                 | • Toxicity  
|                 | • Ignitability  
|                 | • Reactivity  
|                 | • Corrosivity  
|                 | • Wastes from nonspecific sources listed in the California Code of Regulations (22 CCR 66261.31–22 CCR 66261.33) and the Code of Federal Regulations (40 CFR Part 261.31–Part 261.33). These wastes include certain discarded commercial chemical products, off-specification products, container residues, and spill residues. |
| Medical waste | According to federal and California laws, refers to waste that is generated or produced as a result of the diagnosis, treatment, or immunization of humans or animals; in research pertaining to the treatment, diagnosis, or immunization of humans or animals; or in the production or testing of biologicals (medicinal preparations made from living organisms and their products including serums, vaccines, and antitoxins) and is either: |
| Mixed waste | Any radioactive waste that is also a hazardous waste |
| Mixed Waste Satellite Accumulation Area (MWSAA) | Designated area within a Radioactive Materials Area used for the accumulation of mixed wastes. |
|           | • Volume and time limits are the same as for Satellite Accumulation Areas (SAAs).  
|           | • Boundaries must be clearly delineated with tape, signs, and arrows.  
|           | • MWSAA must be in a room where waste was generated (or an immediately adjacent room) and clearly designated with a purple MWSAA sign. |
| Radioactive waste | Wastes that contain radioactivity distinguishable from background or have been induced to be radioactive. |
| Satellite Accumulation Area (SAA) | An area in an individual laboratory, shop, or other facility designated by the generator for the accumulation of waste not to exceed 208 liters (55 gallons) of hazardous waste or 0.95 liter (1 quart) of extremely or acutely hazardous waste. The area must be at or near the point of waste generation and under control of the person generating the waste. |
| Waste Accumulation Area (WAA) | An officially designated area for the accumulation and storage of large quantities of hazardous waste |
| Waste characterization | The detailed documentation of the waste constituents (hazardous and nonhazardous) such that appropriate regulatory codes can be applied, and treatment, storage, and disposal decisions can be made. Characterization can include process knowledge, analyses, or written documentation (logbooks, Material Safety Data Sheets, etc.). |

**G. Recordkeeping Requirements**

The care, maintenance, and disposition of Waste Management records will be done in accordance with Berkeley Lab records-management policies and procedures, as listed in the [Requirements and Policies Manual (PUB-201)](https://www.berkelley.gov/policies/).
H. Implementing Documents

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<thead>
<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>07.08.001.001</td>
<td>Radiation Safety</td>
<td>Program</td>
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<tr>
<td>07.10.002.001</td>
<td>Waste Management</td>
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<td>07.10.002.003</td>
<td>Work Process B, Storing Waste at the Site of Generation</td>
<td>Process</td>
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Supporting Documents

- EH&S Procedure 817, Waste Characterization Quality Assurance Program
- ES&H Manual, Biosafety Program
- ES&H Manual, Chemical Hygiene and Safety Plan
- ES&H Manual, Asbestos Hazards and Controls
- ES&H Manual, Polychlorinated Biphenyl (PCB) Management
- EH&S Procedure 811, Hazardous Waste Handling Procedures
- ES&H Manual, Radiation Safety Program

I. Contact Information

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EHS Division
mkassis@lbl.gov

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>M. Kassis</td>
<td>Re-write for wiki (brief)</td>
<td>All</td>
<td>Minor</td>
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Revision number | 1
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Next review date: | 12/17/2016
Policy Area: | Waste Management
RPM Section (home) | ESH
RPM Section (cross-reference) | none
Functional Division | EHS
Prior reference information (optional) | PUB-3000 Chapter 20

Source Requirements Documents

- DOE O 435.1 Change Notice 1, Radioactive Waste Management Manual
- DOE O 458.1 Admin Change 3, Radiation Protection of the Public and the Environment
- DOE O 460.1C, Packaging and Transportation Safety

Other Driving Requirements

- 22 CCR 66261.1, Identification and Listing of Hazardous Waste
- 22 CCR 66262.34, Standards Applicable to Generators of Hazardous Waste
- 22 CCR 66273.1, Standards for Universal Waste Management
- 40 CFR Part 261.3, Definition of Hazardous Waste
- 40 CFR Part 261.31, Hazardous Wastes from Non-specific Sources
- 40 CFR Part 261.32, Hazardous Wastes from Specific Sources
- California Health and Safety Code 117600, California Medical Waste Management Act

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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.