



Environmental Health and Safety

100 Morrissey Blvd.
Boston, MA 02125-3393
617.287.5445
www.ehs.umb.edu

Decommissioning Laboratories

Standard Operating Procedure

SOP Number: L-01-2015 Effective Date: November 1, 2015 Next Review: November 1, 2018
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1. PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to ensure safe and compliant transitions in laboratory occupancy when an investigator vacates laboratory space. This SOP requires that none of the investigator's research materials may be left behind and that the investigator conduct proper laboratory decommissioning e.g., that all laboratory equipment, fixtures, furniture and space are properly cleaned and decontaminated.

This SOP will be administered by UMass Boston Environmental Health and Safety (EHS).

2. SCOPE

Principal Investigators, Departments and Project Managers are responsible for complying with this SOP including providing advanced notice of a laboratory move.

The UMass Boston Space Committee may request decommissioning of laboratory spaces if they have approved a move or change in use for a space

This SOP applies to all research and teaching laboratories owned by UMass Boston or occupied by UMass Boston students, faculty or staff that use chemicals, radioactive materials, biologicals, human pathogens, controlled substances, compressed gases, or mercury-containing equipment. The procedure applies whenever a laboratory space is to be vacated for any reason.

This SOP also applies to ancillary research spaces such as cold rooms or freezers in hallways that are vacated by an investigator.

3. BACKGROUND

3.1 Regulatory Requirements

EHS oversight of laboratory decommissioning ensures compliance with various transportation and licensing requirements.

- The U.S. Environmental Protection Agency (EPA) generally requires that all chemicals must be removed from a vacating laboratory within three days. Prior to vacating a laboratory, laboratory personnel (who are the most knowledgeable) must properly label and/or identify all remaining chemicals, samples and containers.
- The U.S. Nuclear Regulatory Commission requires removal of all radioactive materials and waste. No radioactive material or waste may be unsecured.
- The U.S. Drug Enforcement Agency and the State of Massachusetts requires removal of all controlled substances. No controlled substance may be unsecured.
- The State of Massachusetts requires removal of all human pathogens and infectious waste.

3.2 Equipment

Laboratory equipment, fixtures, furniture and space that has not been properly cleaned and decontaminated may pose a hazard to EHS staff, movers, construction and renovation personnel and future occupants. To ensure safety, safety critical equipment must be certified in place. Prior to use, EHS or their designee must recertify all critical lab equipment that has been moved.

3.3 Materials

Research materials (e.g., chemicals, biologicals, radioactive materials, needles) left in a vacated laboratory pose hazards to EHS staff, hazardous waste contractors, construction and renovation personnel, and future occupants. The hazard is more serious when such materials are unlabeled, unidentified, unstable, improperly stored, contaminated or improperly contained. When unsecured in a vacant laboratory, research materials are also at risk of theft, diversion and misuse.

Research materials that are not promptly removed from a vacated laboratory are ineligible for redistribution or recycling, making disposal the only viable option. Disposal costs are dramatically more expensive than recycling/redistribution costs due to extra characterization and necessarily conservative handling.

The Principal Investigator and his or her laboratory staff are primarily responsible for complying with this Policy because they are the most knowledgeable (and may have the only knowledge) of the identity, character and hazard of materials and contamination in their laboratory.

4. PROCEDURE

4.1 Laboratory Move Preparation

Before any laboratory move or closure can occur, the following preparations must take place:

- ✓ Depending on the size and scope of the move, stop research activities 1-2 weeks prior to move. Contact EHS to help estimate the time commitment.
- ✓ Clean off all benches. Remove lab matting and clean any spilled materials. Wipe down all benches with an appropriate disinfectant.
- ✓ Completely empty all drawers.
- ✓ All razor blades, needles, syringes, pipette tips, etc. in drawers, on benches, shelves or the floor must be disposed of properly.
- ✓ If research materials must be shipped to another location or institution, EHS must be contacted for approval. Do not ship any material until consulting with EHS.

4.2 Chemical Safety

If the laboratory has chemicals, the following preparation must take place:

- ✓ Decontaminate any equipment used with chemicals.
- ✓ Chemical waste and unwanted chemicals must be labeled as hazardous waste and inventoried on a laboratory clean-out sheet.
- ✓ Contact EHS for pick up by emailing umbehs@umb.edu.
- ✓ Non-hazardous dry chemicals may be properly packed and moved within buildings. All other chemicals must be evaluated by EHS or packaged and shipped by an EHS-approved hazmat transporter.
- ✓ Chemicals which are moving within University buildings must be placed in a leak proof secondary container. Chemicals may be placed on a cart and moved by lab personnel with EHS clearance.

4.3 Radiation Safety

If the laboratory space has used radiological material, the following steps must be taken:

- ✓ Collect all radioactive waste and contact EHS to schedule a pick-up. Pick up requests can be emailed to umbehs@umb.edu; it may take up to 5 business days for waste removal.
- ✓ Items which will be moved by non-lab personnel or which will be discarded must be cleared by EHS.
- ✓ For in-house moves in which items stay inside buildings and are moved by laboratory staff, no EHS clearance is necessary. Laboratory staff must wipe test and meter these items.

- ✓ Radiation which is moved inside buildings must be properly packaged in 2 sealed leak-proof containers, placed on a cart and taken to the new location by trained lab staff. Care must be taken to ensure that proper shielding is in place, if necessary. EHS personnel must be consulted if large amounts of isotope or isotope with significant dose rates are to be moved.
- ✓ Do not deface labels on equipment to be checked by EHS until it is cleared.
- ✓ Assemble all labeled items (large items may be left where they are) for EHS to clear.
- ✓ Conduct a final monthly survey of the lab. Clean any contamination found and survey and document results.
- ✓ Have all gas cylinders removed by Receiving.

4.4 Biological Safety

If the laboratory has biological material, the following preparations must take place:

- ✓ Use an appropriate disinfectant, prepared in accordance with manufacturer's instructions, to decontaminate all equipment. Post a "Biosafety Notice" on each item once decontamination procedures have been completed.
- ✓ Properly autoclave/dispose of all infectious/biological waste.
- ✓ Ensure biosafety cabinet (BSC) has been decontaminated. Decontamination should be performed at least 2 days before the move.
- ✓ Properly dispose of all sharps, including unused needles and syringes.
- ✓ Biological material moved within buildings must be packaged in two sealed leak-proof containers and should be placed on a cart and moved to new location by lab personnel. Within University buildings, the moving company may move BL1 or BL2 materials in -80 freezers if the materials are properly packaged in 2 leak proof containers by the laboratory personnel.

4.5 Coordination with Moving Company

Prior to moving company arrival:

- ✓ All chemicals must be removed from laboratory.
- ✓ All laboratory waste (chemical, biological and radioactive) must be out of the laboratory.
- ✓ All benches must be decontaminated.

After the moving company has finished:

- ✓ Ensure that all sharps (razors, syringes, needles, pipette tips, etc.) have been removed from areas where equipment may have been, including drawers and shelves

5. ROLES AND RESPONSIBILITIES

5.1 EHS Responsibilities

When an investigator vacates laboratory space, EHS is responsible for verifying that the space is free of hazardous materials and contamination. EHS will complete this verification in a timely manner, and will provide a written approval to the department (for new occupancy) or project manager (for space to undergo construction/renovation).

EHS staff will provide detailed instructions and guidance to investigators and their staff in advance of all laboratory moves, closures and decontamination, including requirements for labeling and identification of research materials.

EHS staff will evaluate and provide guidance for the movement of research materials. If the materials in question are to be moved on city streets and lab staff are not trained to properly package and/or ship these items, EHS will provide a trained individual to assist in this process. Each Principal Investigator will be responsible for the cost of the shipping containers as well as all incurred shipping charges.

EHS will pay for the removal and ultimate disposal of all properly labeled and classified research materials. If research materials are inappropriately left after the space is vacated, EHS will arrange for the proper disposal and decontamination. The costs of these activities, including labor charges to properly segregate and label hazardous materials, will be charged directly to the investigator.

5.2 Principal Investigator Responsibilities

Each investigator is responsible for ensuring proper characterization and disposition of research materials and decontamination of laboratory equipment, fixtures, furniture and space. Investigators must notify EHS 30 days prior to vacating laboratory space. EHS notification is required even if only a single room is to be vacated, and even if the space is to be used by another investigator.

Each investigator is also responsible for:

- The safety of materials and equipment left behind in a vacated laboratory, even if the laboratory is to be used by another Principal Investigator.
- Adherence to established EHS procedures for safe and compliant disposal and decontamination of research materials. If these procedures are not followed, EHS will arrange for the proper disposal and decontamination, as it deems necessary. The costs of these activities, including labor charges to properly segregate and label hazardous materials, will be charged directly to the investigator.

- Ensuring that research material cleanouts are performed by staff knowledgeable of hazards and trained in all required safety disciplines.
- Informing EHS prior to the shipment or movement of any hazardous materials especially those requiring transportation on city streets.

Critical Equipment

Each investigator is responsible for notification of EHS whenever they plan to move any of the following critical equipment, even if the move is across a room or from one room to another (see Attachment 2 for detailed lab move checklist):

Autoclaves
Automated film processors
Biological safety cabinets
Clean Benches (Horizontal or Vertical Laminar Flow)
Compressed Gas manifold delivery systems
Electron microscopes
Ethylene oxide sterilizers
Fume hoods
Gamma counters (or gamma detectors)
Glove boxes
High Magnetic Field Equipment
Lasers - Class IIIb or IV
Liquid scintillation counters (LSC)
Refrigerators/Freezers
X-ray equipment

5.3 Departmental Responsibilities

Department Chairs and Business Managers are responsible for:

- Working with the UMass Boston Space Committee to identify spaces for decontamination.
- To ensure proper disposal of research materials and decontamination of laboratory equipment, fixtures, furniture and space, Departments must notify EHS 30 days prior to vacating laboratory space. EHS notification is required even if only a single room is to be vacated, and even if the space is to be used by another investigator.
- The costs of decontamination and disposal of research materials in situations where there has been a failure to meet the requirements listed in the Investigator Responsibilities section if those costs cannot be recovered from the investigator.
- Securing written approval from EHS before reassigning vacated laboratory space.
- Securing written approval from EHS before initiating construction or renovation in vacated laboratory space.
- Ensuring that research material cleanouts be performed by staff knowledgeable of hazards and trained in all required safety disciplines, including temporary hires on an as needed basis.

5.4 Project Manager Responsibilities

Project Managers who are assigned laboratory renovation projects are responsible for ensuring the proper disposal of research materials and decontamination of laboratory equipment, fixtures, furniture and space. Project Managers must notify EHS 60 days prior to vacating laboratory space. EHS notification is required even if only a single room is to be vacated and even if the space is to be used by another Principal Investigator.

Project Managers are also responsible for:

- The costs of laboratory renovation projects that relate to decontamination and research material disposal.
- Ensuring that vacated laboratory space is not re-occupied without prior written approval from EHS.
- Ensuring that construction or renovation not commence in vacated laboratory space without prior written approval from EHS.

6. REFERENCES

UMass Boston Environmental Health and Safety procedures can be found on its web site: www.umb.edu/ehs

Laboratory Decommissioning Standard, ANSI Z9.11 (2008), American National Standards Institute

UMass Boston Facilities Operations: <https://www.umb.edu/facilities>

7. COMMITTEE REVIEWS and APPROVALS:

Institutional Biosafety Committee

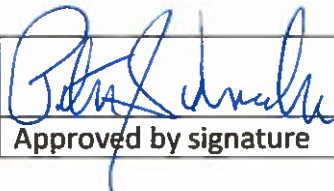
Radiation Safety Committee

Laboratory Safety Committee

8. ATTACHMENTS

Lab Specific Decontamination Risk Assessment

Laboratory Move Checklist

	Peter Schneider EHS Director	11/1/15
Approved by signature	Name, Title	Date