



Northeastern University

Environmental Health & Safety

Laboratory Decommissioning Procedure

Overview

All laboratory rooms, chemical storage areas, or areas where hazardous equipment or materials are used or stored must be decommissioned and cleared by EH&S before assigned to new occupants or scheduled for renovation activities. The Principal Investigator and Department are responsible for ensuring that the transfer and/or disposal of all chemical, biological, radioactive materials is properly completed prior to vacating the space. In addition, the decontamination of equipment, hoods, storage cabinets, and counters must be done and arrangements made for the removal of unwanted lab equipment, supplies, electronics, and furniture.

Applicability

The procedures described here must be followed when laboratories, chemical storage areas, or areas where hazardous equipment or materials at Northeastern University are to be vacated whether due to a Principle Investigator leaving the institution, research activities in a laboratory being relocated or terminated, or a renovation project being scheduled. The Office of Environmental Health and Safety (EH&S) should be notified at least 30 days prior to the anticipated departure. Once notified, EH&S can provide additional guidance or assist with a pre-closeout inspection to outline the safety issues that need to be addressed.

Responsibilities

- *Laboratory Safety Committee* will provide proper guidance for the close-out requirements for vacating laboratories.
- *Environmental Health and Safety* will guide Principal Investigators and Departments through the process of cleaning up a laboratory for clearance purposes. EH&S will issue a laboratory decommissioning form (page 7) for those vacated laboratories found to be compliant with these guidelines.
- *Departments* are responsible for ensuring that all Principal Investigators follow these guidelines to ensure laboratory clearance by EH&S. Departments are ultimately responsible for the clearance of laboratory space and equipment of Principal Investigators that have left the university.
- *Principal Investigator(s)* are responsible for following these guidelines to ensure that laboratories are left in a suitable condition for EH&S to issue a laboratory decommissioning form.
- *Facilities Services personnel and Outside Contractors* **must** not work in laboratories that have not been cleared. Cleared laboratories will have an orange "lab has been

decommissioned" form posted conspicuously on the door of the laboratory or the space that has been cleared.

Procedure

Laboratory space cannot be re-occupied nor renovated until the space has been inspected and decommissioned by Environmental Health and Safety. The vacating Principal Investigator and Department must complete the following procedures before the laboratory space will be decommissioned by Environmental Health and Safety. Please consult the applicable documents on the EH&S website: <http://www.northeastern.edu/ehs/> for additional information or guidance on proper disposal.

1. Radioactive Materials (RAM)

If the laboratory has been authorized for use of radioisotopes or radiation-producing devices, you must call EH&S at (617) 373-2769, for assistance with clearance. All radioactive waste, lead pigs, lead bricks, sheeting, and radioactive sources from equipment must be properly transferred or disposed. A final contamination survey must be performed by the authorized user and EH&S.

- Perform a thorough radiation contamination survey of the laboratory, including equipment, to determine if allowable contamination levels are achieved. Areas found to exceed background readings must be decontaminated and resurveyed.
- Remove all "Radioactive" or "Caution – Radioactive Materials" labeling and signs from equipment once it is decontaminated.
- If the radioactive material is to be transferred to an authorized user at Northeastern, contact EH&S for approval. If the radioactive material is to be transferred to another licensee or returned to the manufacturer, make arrangements for EH&S to pick up the material for shipment. Radioactive waste must not be transferred to another authorized user or laboratory; arrange with EH&S for disposal.
- Equipment that cannot be decontaminated must be disposed of as radioactive waste or arrangements made to have it specially transported.

2. Biosafety Registration

- Submit a location change amendment to biosafety@northeastern.edu for all biological registrations (before the move).
- Contact Biosafety Program Manager to set up a laboratory visit for new space.

3. Biological Materials

- Place all sharps (syringes, Pasteur pipettes, serological pipettes, razor blades, etc.) in a sharps container and follow the set disposal procedures, see the following factsheet: <http://www.neu.edu/ehs/EHS-programs/biosafety/>.
- Dispose of all solid biohazardous waste in the laboratory by autoclaving or sending it for incineration. If special arrangements to handle the waste need to be made, please contact the biosafety program manager.

- Remove fixed tissue from preservative before disposal.
- Dispose of chemical preservatives as hazardous chemical waste.
- Decontaminate all liquid biological waste by autoclaving or by treating it with bleach for 30 minutes, before sink disposal.
- Animal tissue and remains should be placed in a sealed double plastic bag and disposal coordinated through the Laboratory Animal Medicine Department.
- If any biological material will be transferred to a collaborating PI, please notify the biosafety program manager.
- If any biological material will be shipped, please contact the biosafety program manager weeks prior to the shipment date.

4. Equipment and Work Surfaces

- Decontaminate all work surfaces and equipment (biosafety cabinets, incubators, centrifuges, refrigerators, freezers, water baths & any other small equipment labeled and/or used for biohazardous work) using freshly made 10% Bleach, Cavicide, or disinfectants listed in your biosafety registration.
- Equipment decontamination forms are available from EHS and must be adhered to all equipment that has been disinfected and is safe to move.
 - Biohazard labels can be covered with equipment decontamination tags for equipment that will remain biohazardous following internal moves.

5. Biological Safety Cabinets (BSC)

- Remove all of the contents.
- Disconnect tissue culture media vacuum flask.
- Decontaminate all accessible surfaces with an appropriate disinfectant.
- Decontaminate the BSC by a certified contractor.
- Re-certify the BSC using a certified contractor when the BSC is relocated.
- If the BSC is not being moved and repair work will not open the contaminated inner space, a surface decontamination with an appropriate disinfectant is sufficient.

6. Controlled Substances

- The US Drug Enforcement Agency (DEA) may issue controlled substance permits to individuals.
- Abandonment of a controlled substance is a violation of the DEA permit under which it was held.
- Permission to dispose or transfer ownership of a controlled substance to another individual must be properly documented and approved.
- Licensed individuals may dispose of controlled substances through EH&S. Call (617) 373-2769 for information.
- If controlled substances are found and the licensee is unknown, contact EH&S.

7. Internal Relocation of Chemicals

Qualified lab personnel are permitted to transport limited quantities and types of chemicals from their current laboratory to the new laboratory, if it is within the main Boston Campus (cannot cross railroad tracks or public roads, see

“External Relocation of Chemicals” if this applies to your lab) and using an appropriate cart (no use of personal vehicles). Lab personnel must contact EH&S to discuss transportation procedures including cart usage, secondary containment, and proper incompatible chemical segregation. Upon relocation, the chemical inventory for the laboratory must be updated in ChemTracker. If the lab does not wish to move the chemicals themselves, the lab can utilize the procedure for “External Relocation of Chemicals”.

8. External Relocation of Chemicals

Chemical moves to laboratories in external locations (off the main Boston Campus) **must** be transported by a U.S. Department of Transportation approved hazardous material hauler. EH&S has agreements with vendors to provide this service. The vendor will prepare all paperwork necessary for the chemical move. In order to utilize these services, lab personnel are required to:

- Segregate all chemicals from shelves, cabinets, etc., which require moving and place them in a designated location within the laboratory. Label the area “Chemicals to be moved”.
 - Liquids must be staged in secondary containment bins.
- Communicate chemical relocation to laboratory colleagues, including all external groups in a shared lab space (if necessary).
- Upon relocation, the chemical inventory for the laboratory must be updated in ChemTracker.
- Relocated chemicals will be unpacked by the vendor and placed in an area where lab personnel can place them into appropriate storage.
- Hazardous waste will not be transported to a new laboratory and must be properly labeled and left behind for later disposal.

9. Hazardous Chemical Waste Disposal

All hazardous chemical waste must be managed in accordance with the NU Hazardous Waste Disposal Procedures. See the following EH&S program site for additional information:

<http://www.northeastern.edu/ehs/ehs-programs/hazardous-waste-management/>

At a minimum, the following procedures must be followed:

- EH&S has developed a Chemical Recycling Program for unused chemicals. Chemicals that are collected through the program or donated by laboratories unused are made available to all Northeastern researchers and faculty free of charge. Please reach out to EH&S for further information.
- Keep an appropriate hazardous waste label on all waste containers.
- Hazardous waste labels are available free-of-charge by placing an online hazardous waste request through BioRAFT, contacting EH&S or by downloading them from our website.
- Hazardous chemical wastes must always be placed in appropriate containers and closed.
- Designate Satellite Accumulation Area's (SAA) where hazardous chemical wastes are generated in your laboratory.

- Accumulation Area posters are available by placing an online hazardous waste request through BioRAFT or contacting EH&S.
- To get your hazardous waste picked up, submit a request through the BioRaft Hazardous Waste Module.
- All waste must be clearly and labeled and sealed within an appropriate container. Label containers as soon as they start to accumulate waste. Abbreviations or chemical symbols are not acceptable labeling.
- All unknown chemicals must be identified. Disposal of unknown substances is prohibited.

10. **Return Compressed Gas Cylinders**

Remove regulators and replace the valve stem cap. Return gas cylinders to the supplying vendor. Contact EH&S for non-returnable cylinders.

11. **Relocating Compressed Gas Cylinders (including Liquid Nitrogen Cylinders)**

When laboratory relocations require crossing a public road compressed gas cylinders (including Liquid Nitrogen Cylinders) **must** be transferred by the supplying vendor. Please call the appropriate vendor prior to relocating to arrange the move.

12. **Liquid Nitrogen-lined Freezers**

The vendors supplying liquid nitrogen recommend that liquid nitrogen-lined freezers be drained to a minimum level (to sustain freezing of cells) prior to relocating. Liquid nitrogen freezers are to be moved by a moving company and should be scheduled for refill as soon as possible at the new location by the vendor.

13. **Laboratory Equipment Relocation or Disposal**

The following procedures must be completed before laboratory equipment will be cleared:

- Remove all contents from laboratory equipment, e.g. chemicals, media. and glassware.
- Remove all bench coat and disposable liners/covers from equipment and dispose of properly.
- Decontaminate all surfaces of contamination prone equipment, e.g., refrigerators, freezers, incubators, water baths, biological safety cabinets and centrifuges, with an appropriate disinfectant. Contact EH&S for assistance.
- Most freezers which have been used for the storage of biological materials must be unplugged and defrosted. Minus 140 degree freezers can be left intact and do not need to be defrosted.
- Incubators and water baths must be drained of all standing water, including water inside the jacket.
- If laboratory equipment is to be discarded, be aware that capacitors, circuit boards, transformers, mercury switches, mercury thermometers, radioactive sources and chemicals must be removed before disposal. Contact EH&S for assistance.

14. **Electronics Recycling**

All electronics (central processing units, monitors, keyboards, printers, televisions, and scanners) must be separated from general trash and placed into a designated area for collection by Facility (617-373-2754). Follow the published "asset

disposition procedures" located at: <http://www.northeastern.edu/facilities/policies-forms/>. For computers to be re-allocated within the University, all data must first be "wiped" from the disk drive(s), prior to reallocation. Conventional formatting or "FDISK" is not sufficient to assure data destruction. Disk "wiping" service is currently offered FREE OF CHARGE by the Information Security department. For service, contact help@Northeastern.edu. Computers awaiting pickup for reallocation or recycling must be stored inside an office or other non-public physical space, and must remain there until picked up. Storage in publicly accessible areas such as hallways or loading docks is not permitted.

15. **General Laboratory Cleanup**

All laboratory areas must be thoroughly cleaned to assure removal of all hazardous residues. All surfaces where hazardous chemicals have been used or stored must be washed with detergent and water. This includes fume hoods, bench tops, cabinets, drawers, floors, etc. For furniture and other items that are to be removed from the laboratory, thoroughly decontaminate accessible surfaces to prevent harm to movers. Remove all bench coat and disposable liners/covers from work surfaces and dispose of appropriately. Empty and properly dispose of material from all drawers, cabinets, and fume hoods. Properly clean laboratory bench tops, cabinets, drawers, floors and fume hood surfaces (preferably with soap and water). If chemical residues or spills have contaminated your fume hood or equipment, a hazardous materials clean-up vendor must decontaminate and certify that the equipment is safe to use. EH&S has agreements with vendors to provide this service. The vendor will prepare all paperwork necessary for this service.

16. **Closeout Inspection**

Once you have completed all the applicable laboratory decommissioning procedures, contact EH&S to arrange for an inspection. Once clearance is completed by all involved EH&S program managers, an orange "Lab has been decommissioned" sign will be posted conspicuously on the door of the laboratory or area that has been cleared. EH&S will also tag any eyewash, safety shower, and/or chemical hood in the laboratory "out of service".

Any regulatory action or fines resulting from improper management or disposal of hazardous materials will accrue to the responsible department.

Questions regarding these procedures should be directed to the Office of Environmental Health and Safety at x2769 or www.Northeastern.edu/ehs.



Northeastern University

Environmental Health & Safety

Laboratory Decommissioning Form

RADIATION SAFETY PROGRAM

- **Radioactive Materials** have been properly Transferred/disposed and a final contamination survey has been completed.

Radiation Safety Program Manager Sign-off _____ Date _____

BIOSAFETY PROGRAM

- **Biosafety Registration** amendment has been submitted and post-move lab visit has been scheduled.
- **Biological Materials** have been properly disposed/transferred/shipped and appropriate decontamination has been completed.
- **Equipment and work surface** have been properly decontaminated.
- **Biological Safety Cabinets** have been professionally decontaminated.

Biosafety Program Manager Sign-off _____ Date _____

HAZARDOUS MATERIAL AND WASTE PROGRAM

- **Controlled Substances** have been properly transferred or disposed.
- **Internal Relocation of Chemicals** has been properly transferred and the chemical inventory has been updated in ChemTracker.
- **External Relocation of Chemicals** has been properly transferred and completed.
- **Hazardous Chemical Waste Disposal / Recycling** has been completed and no chemicals remain in the lab.
- **Relocating Compressed Gas Cylinders** (including Liquid Nitrogen Cylinders) have been properly transferred and completed.
- **Electronics Recycling** has been arranged according to University procedures.

Hazardous Material Program Manager Sign-off _____ Date _____

LABORATORY SAFETY PROGRAM

- **Compressed Gas Cylinders** have been returned to vendors or EH&S contacted for non-returnable.
- **Liquid Nitrogen-lined Freezers** have been properly drained in preparation for moving.
- **Laboratory Equipment Relocation or Disposal** has been properly arranged.
- **General Laboratory Cleanup** has been completed including cleaning of all surfaces, emptying of all drawers and removal of all rubbish.
- **Closeout Inspection** has been arranged with Environmental Health and Safety.

Laboratory Safety Program Manager Sign-off _____ Date _____

Laboratory Location _____ Department _____

Principal Investigator Signoff _____ Date _____

EH&S Final Sign-off _____ Date _____