

Laboratory Closeout Procedure

Overview

Laboratories within Northeastern University must be left in a state suitable for new occupants or for renovation activities. The vacating Principal Investigator and Department are responsible for ensuring that the disposal of chemical, biological, radioactive waste materials is properly completed prior to vacating the space. In addition, the decontamination of equipment and counters must be done and arrangements made for the removal of unwanted lab equipment, electronics, and furniture.

Applicability

The procedures described here are to be used in the event that laboratories within NU are to be vacated whether due to a Principle Investigator leaving the institution, research activities in a particular laboratory are being relocated or terminated, or a renovation project is scheduled. The Office of Environmental Health and Safety (EHS) should be notified at least 30 days prior to the anticipated departure. Once notified a staff member will accompany you or another responsible party in a tour of your laboratory. After the tour the staff member will outline the safety issues that need to be addressed.

Responsibilities

- *Chemical Hygiene Committee* will provide proper guidance for the vacating of laboratories
- *Environmental Health and Safety* EHS will guide Principal Investigators and Departments through the process of cleaning up a laboratory for clearance purposes. EHS will issue a laboratory clearance 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 EHS. Departments are ultimately responsible for the clearance of laboratory space and equipment of Principal Investigators that have left NU.
- *Principal Investigator(s)* are responsible for following these guidelines to ensure that laboratories are left in a suitable condition for EHS to issue a laboratory clearance.
- *Facilities and Outside Contractors* **must** not work in laboratories that have not been cleared. Cleared laboratory equipment will have a signed (by EHS) Clearance Form attached.

Procedure

Laboratory space cannot be re-occupied nor renovation work started until the space has been inspected and cleared by Environmental Health and Safety. The vacating Principal Investigator and Department must complete the following procedures before the laboratory space will be cleared by Environmental Health and Safety. Please consult the applicable document on EHS website <http://www.ehs.neu.edu> for additional information or guidance on proper disposal or the material below.

1. Radioactive Materials (RAM)

If the laboratory has been authorized for radiation use, you must call (EHS) 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 EHS.

- Perform a thorough radiation contamination survey of the laboratory, including equipment, to determine if allowable contamination levels are achieved. Those areas found to exceed the limits must be decontaminated and resurveyed.
- Remove all "Radioactive" labeling and signs from equipment once it is decontaminated.
- If the radioactive material is to be transferred to an approved user at Northeastern, ensure that the appropriate documentation is approved prior to the transfer. If the radioactive material is to be transferred to another licensee or returned to the manufacturer, make arrangements for EHS to pick up the material for shipment.
- Equipment that cannot be decontaminated must be disposed of as radioactive waste.

2. **Biological Waste Materials**

- Place all sharps (syringes, Pasteur pipettes, serological pipettes, razor blades, etc.) in a sharps container and follow regular disposal procedures.
- Dispose of all solid media and supplies in the laboratory as red bag waste for autoclaving or make arrangements with EHS for other disposal.
- Dispose of all other potentially biohazardous waste from the laboratory either through autoclaving or arrangements with EHS.
- Decontaminate all liquid media by autoclaving or by treating for 30 minutes with bleach solution (final concentration to be 10%) before drain disposal.
- Decontaminate all work surfaces using freshly prepared 10% bleach solution or 70% alcohol.
- Remove fixed tissue from preservative before disposal.
- Dispose of chemical preservatives as hazardous chemical waste.
- Dispose all human pathological waste through procedures established by the department responsible for managing the remains.
- Animal tissue and remains should be placed in a sealed double plastic bag and disposal coordinated through the Animal Care Department.

3. **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, if a BSC is being relocated to a location outside of the building.
- Re-certify the BSC using a certified contractor when a 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.

4. **Controlled Substances**

- The US Drug Enforcement Agency (DEA) issues controlled substance permits to individual departments.
- 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 department or individual must be received from DEA.
- Licensed departments may dispose of controlled substances through EHS. Call (617) 373-2769 for information.
- If controlled substances are found and the licensee is unknown, contact EHS.

5. **Internal Relocation of Chemicals**

Lab personnel are allowed to transport chemicals from their current laboratory to the new laboratory, if it is within the main Boston Campus and using an appropriate cart (no use of personal vehicles). Lab personnel must contact EHS 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. If the lab does not wish to move the chemicals, the lab can utilize the procedure for "External Relocation of Chemicals".

6. **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. EHS 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:

- o Segregate all chemicals from shelves, cabinets, etc., which require moving and place them in a central location within the laboratory. Label the area "Chemicals to be moved".
- o Upon relocation, the chemical inventory for the laboratory must be updated.

7. **Hazardous Chemical Waste Disposal**

All hazardous chemical waste must be managed in accordance with the NU Hazardous Waste Disposal Procedures. At a minimum the following procedures must be used:

- o EH&S has developed a Chemical Recycling Program for unused chemicals. Chemicals collected through the program or donated by laboratories that are unused are made available to all Northeastern researchers and faculty free of charge.
- o Keep an appropriate hazardous waste label on all waste containers. Hazardous waste labels are available free-of-charge by contacting EHS or by downloading them from our website.
- o Keep all hazardous chemical waste in an appropriate container (screw type lid) and closed at all times.
- o Keep an area of the laboratory or other points of waste generation designated for hazardous waste only and label utilizing Hazardous Waste Satellite Accumulation Area poster available by contacting EHS.
- o Complete the Hazardous Waste Disposal Request Form on the EHS website.
- o All waste must be clearly labeled and sealed. Label unmarked or unclearly labeled containers as soon as they are located. Abbreviations or chemical symbols are not acceptable labeling. Identification and disposal of unknown substances is one of the most costly closeout activities, with average disposal fees of approximately \$100 per container. If an item is truly unknown, please segregate it for identification during waste collection.

8. **Disposal of Compressed Gas Cylinders**

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

9. **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.

10. **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 moved by the moving company and should be scheduled for refill as soon as possible at the new location by the vendor.

11. 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 in red bag waste.
- Decontaminate all surfaces of contamination prone equipment, e.g., refrigerators, freezers, incubators, water baths, biological safety cabinets and centrifuges, with an appropriate disinfectant. Contact EHS for assistance.
- Freezers which have been used for the storage of biological materials must be unplugged and 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 EHS for assistance.

12. 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 Services (617-373-2754). Follow published asset disposition procedures located at: <http://www.facilities.neu.edu/forms.html>. 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 <http://www.help@neu.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.

13. 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 bench tops, cabinets, drawers, floors, and 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 in red bag waste.
- 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)

Close Out Inspection

Once you have completed all the applicable laboratory close out procedures, contact EHS to arrange for an inspection. Once clearance is completed, the Laboratory Clearance Form will be posted conspicuously in the laboratory or area that has been cleared. 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 ehs@neu.edu.

Laboratory Closeout Procedure Check-off Sheet

	Yes	NO	N/A
1. Radioactive Materials have been properly transferred/disposed and a final contamination survey has been completed.	_____	_____	_____
2. Biological Materials have been properly transferred/disposed and appropriate decontamination has been completed.	_____	_____	_____
3. Biological Safety Cabinets has been properly emptied and decommissioned.	_____	_____	_____
4. Controlled Substances have been properly transferred and disposed	_____	_____	_____
5. Internal Relocation of Chemicals has been properly transferred and completed.	_____	_____	_____
6. External Relocation of Chemicals has been properly transferred and completed.	_____	_____	_____
7. Hazardous Chemical Waste Disposal / Recycling has been completed and no chemicals remain in the lab.	_____	_____	_____
8. Compressed Gas Cylinders have been returned to vendors or EHS contacted for non-returnables	_____	_____	_____
9. Relocating Compressed Gas Cylinders (including Liquid Nitrogen Cylinders) has been properly transferred and completed.	_____	_____	_____
10. Liquid Nitrogen-lined Freezers have been properly drained in preparation for moving.	_____	_____	_____
11. Laboratory Equipment Relocation or Disposal has been properly arranged.	_____	_____	_____
12. Electronics Recycling has been arranged according to University procedures.	_____	_____	_____
13. General Laboratory Cleanup has been completed including cleaning of all surfaces, emptying of all drawers and removal of all rubbish.	_____	_____	_____
14. Closeout Inspection has been arranged with Environmental Health and Safety.	_____	_____	_____

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

Laboratory Location _____ Department _____

Principal Investigator Signoff _____ Date _____

EHS Sign-off _____ Date _____