

UNIVERSITY OF ROCHESTER

LABORATORY DECOMMISSIONING PROGRAM

Over the years, a number of laboratories have been vacated by Principal Investigators and were found to contain abandoned equipment, chemicals, biological specimens, sharps, radioactive materials, and a variety of waste materials. Those entering these spaces (cleaning staff, contractors, new occupants, etc.) were placed at risk of exposure to unknown agents. To correct these issues, a Laboratory Decommissioning Program has been implemented.

Periodic changes/updates are made to this program as needed. Ultimately the Principle Investigators and their associated Departments are responsible to adhere to this program. Environmental Health and Safety (EH&S) will construct, implement, and oversee the program.

Initial Date: August 2002

Revision Date: October 2003

Minor Revisions: August 2004

Revision: October 2008

Revision: January 2011

Revision: June 2016

Revision: May 2018

I. GENERAL PRINCIPLES

- A. This program is applicable for all clinical and research laboratories and auxiliary spaces serving laboratories. This program provides requirements for the removal of non-fixed materials when a user or researcher vacates laboratory space. These can include:
 - 1. Leaving the University of Rochester;
 - 2. Moving to another building or location;
 - 3. Relocating to another laboratory within the same building; or
 - 4. Moving out of an off campus location.
- B. When laboratories are vacated, **ALL chemicals, radioactive materials, biological materials, sharps, wastes, and equipment must be removed and disposed of through University approved waste systems/methods.**
- C. **ALL** non-fixed pieces of laboratory equipment must be decontaminated prior to removal and tagged as such before being placed back into service, stored in another location, recycled, or disposed of by Facilities or an outside vendor (see Appendix 1).
- D. **ALL** working surfaces and storage locations must be properly decontaminated and cleaned. Depending upon the materials used in the lab, a NYS approved disinfectant is required for biological materials, Radiacwash for radiological materials, and soap and water for chemical and all other general areas.
- E. If a vacated lab does not undergo an EH&S supervised and approved decommissioning, the space and all the materials within it become the responsibility of the Department and/or the new PI/Supervisor. Those labs not reoccupied become the responsibility of the Department.
- F. The EH&S Laboratory Safety Unit will conduct a final decommissioning inspection to ensure that all areas are properly cleaned to the expectation of this program. The staff can be reached at 275-3241.

II. DEFINITIONS

- A. Laboratory Decontamination: The removal of chemicals, drugs, sharps, biological materials, radioactive substances, supplies, papers/records, non-fixed equipment, and the sanitation (removal of gross contamination) from surfaces. Labs in a decontaminated condition do not pose a recognized hazard to staff, visitors, or contractors.
- B. Approved Laboratory Decommissioning: An inspection/audit of a lab by EH&S staff to verify the removal of all chemicals, drugs, sharps, biological materials, radioactive substances, supplies, papers/records, non-fixed equipment, and surfaces have been adequately cleaned to remove gross

contamination, so the space can be reused by other lab staff or undergo renovations by contactors.

- C. Conditional Laboratory Decommissioning: An inspection/audit of a lab by EH&S staff where one or more conditions are still present in a lab but it/they do not pose a hazard to staff or contractors in their present situation.
- D. Laboratory (lab): A laboratory is defined as a place equipped for experimental study in a science or engineering department and used for testing and analysis using relatively small quantities of chemicals, biologicals, and/or radiological agents. Laboratories include, but are not limited to, research labs, animal procedure rooms, student teaching labs, instrumental/laser labs, clinical labs, environmental rooms, and associated locations used to house/store research and or testing materials from labs. Locations that include but are not limited to music labs, sound labs, and computer labs are **NOT** considered labs under this program.
- E. Principal Investigator (PI): Consistent with usage in federal grants and contracts, an individual who receives funding to perform a study. The term PI, in the context of lab decommissioning, can include a co-Principal Investigator (co-PI) and/or a Radioactive Material Permit Holder. These individuals may also receive funding under the auspices of a non-government funding source. This program impacts those PIs who have labs under their direction.
- F. Renovation: A renovation is defined as a change in the physical environment of a lab that could include the removal or installation of walls, doors, cabinets, benches, fume hoods, etc. Repairs or replacement in kind are considered general maintenance activities.
- G. Supervisors: Clinical laboratories are structured differently than research labs. Rather than a PI heading a lab, clinical labs are under the direction of Supervisors and Managers reporting to a Director. Under this program, the Supervisor/Manager/Director responsibilities shall be the same as that of a PI.
- H. Clean Out/Cleaned: The removal of all possible gross contamination by use of detergents or disinfectants.

III. RESPONSIBILITIES

- A. Deans, Directors, Department Heads
 1. Ensure that PI/Supervisors using biological, chemical, radioactive, and/or all other hazardous materials are aware of and follow the procedures in this program.
 2. See section III.C for additional responsibilities.
- B. PI/Supervisor
 1. The PI/Supervisor is to notify his/her department, the Radiation Safety Unit, the Laboratory Safety Unit, and/or the Environmental Compliance

Unit when he/she will be leaving the University or relocating within the University.

2. The PI/Supervisor is to take specific safety measures before leaving or relocating when transferring chemicals to another location and/or disposing of chemicals that are no longer needed.
 - a. The Environmental Compliance Unit Hazardous Waste Group (275-2056) should be contacted for specific chemical disposal questions.
 - b. All chemicals must be removed from the laboratory
 - i. The Hazardous Waste Group **requires the disposal of all unwanted chemicals prior to the actual move date. The PI or the designated individual must complete a Chematix waste tag for each chemical container for disposal and place the tag on the container. The Chematix system must then be used to notify the Hazardous Waste Group for a pick up. For large quantities of chemicals, allow up to 14 days for the pickup.**
 - ii. Those chemicals to be moved to another lab within the University must be re-assigned and transferred to the new location using Chematix. Please contact the Laboratory Safety Unit for assistance.
3. All chemical shipments to off-site locations must be transported in accordance with US Department of Transportation requirements by licensed vendors.
4. The PI/supervisor is to take specific measures before leaving/relocating for the transfer of biological agents and/or animal tissues.
 - a. All biologically active materials being transported to off-site locations must abide with US Department of Transportation and IATA Shipping regulations.
 - b. The University's Biological Safety Officer 275-3014 can be contacted for appropriate disposal or shipping regulations.
5. The PI/Supervisor must take specific measures before leaving a laboratory for the transfer or disposal of radioactive materials. These measures include:
 - a. Notifying the Radiation Safety Unit (275-3781) 4 weeks prior to leaving.
 - b. Surveying and decontaminating all areas where radioactive materials were used or stored. Equipment in which radioactive materials were used/stored shall be surveyed and decontaminated. The surveys shall be documented in the laboratory logbook.
 - c. Transferring any remaining radioactive materials to another

University of Rochester Permit Holder with Radiation Safety's consent, or making arrangements with the Radiation Safety Unit for disposal. Arrangements can be made through Radiation Safety should there be a need to ship radioactive materials and/or radioactive equipment to an off-site location.

- d. Removing and destroying all labels indicating the presence of radioactivity.
 - e. Reconciling the radioactive materials inventory in the logbook.
 - f. Canceling dosimetry badges, if appropriate.
6. All labs and storage areas and working surfaces are to be cleaned with an appropriate detergent, disinfectant, or decontamination agent based on those materials used in the lab. This includes, but is not limited to, NYS approved disinfectants, Radiacwash, or soap and water.
 7. Chemical and/or biological storage equipment (corrosive cabinets, flammable liquid storage cabinets, incubators, refrigerators, freezers, etc.) and non-fixed lab equipment (centrifuges, cryostats, incubators, sonicators, etc.) are to be emptied and cleaned/disinfected prior to being moved or disposed. After the appropriate decontamination activity is completed, **attach a copy of the Equipment Decontamination Form (see Appendix 1) to the piece of equipment/apparatus.** If the form is not completed and posted on the equipment, it may be assumed that the equipment was not cleaned and may delay moving, repairing, renovation, and disposal activities.
 8. All chemicals, equipment, wastes, etc. must be removed from the chemical fume hood's counter top and the hood's support cabinet and the counter top and cabinet cleaned to remove gross contamination. Personnel should schedule work involving the use of a fume hood to allow adequate time to disassemble active chemical research apparatus before cleaning these areas.
 9. Biological safety cabinets (BSCs) must be decontaminated by an approved outside certified vendor before moving or disposing of the unit. After the decontamination activity is completed, **a copy of the vendor's decontamination form is to be attached to BSC.** If this form is not on the BSC, it may be assumed that the equipment was not decontaminated, delaying moving, repairing, renovation, or disposal activities.

PLEASE NOTE: All BSCs must be re-certified by an approved outside vendor once settled in its new location and before being used. This is to ensure the filter or blower was not damaged or dislodged during the moving process.
 10. All lab apparatus must be removed from the lab. All papers, rags, empty bottles, boxes, glassware, plastic ware, etc. are to be properly removed/disposed of prior to vacating the lab.
 11. All compressed gas cylinders are to be removed and sent back to the

supplier prior to the decommissioning of the laboratory. If relocating, all compressed gas cylinders must be capped and transported appropriately to the new location using an approved cylinder cart. If leaving the University or relocating to another building, the PI is to contact the gas vendor to have the company's gas cylinders removed/returned/relocated.

12. The PI will be responsible for all problems discovered and identified during the decommissioning process. A final approval will not be granted until all issues have been corrected, unless a conditional approval has been granted.
13. Construction and/or demolition crews will not be allowed to enter the areas until the laboratory decommissioning has been approved by EH&S and signage has been posted on the outer door of all the spaces.

C. The Department / Unit

1. The department/unit is responsible for verifying that the Laboratory Safety Unit and/or the Radiation Safety Unit have been notified **at least 4 weeks prior** to an investigator moving spaces or leaving the University. This can be accomplished by e-mail questions@safety.rochester.edu or by phone (275-3241).
2. The Department is responsible for any issues or deficiencies not corrected by the PI. Should the laboratory not be appropriately decontaminated the Department will be held accountable for costs or fees to complete any required decontamination activities.
 - a. These activities may include but not limited to: disposal or decontamination of equipment, chemicals, lab benches, drawers, cabinets, samples, and/or all other research or laboratory related hazards identified within the space.
 - b. The department/unit is responsible to verify items in departmental common spaces belonging to or associated to the PI have been removed. This includes locations where chemicals, biologicals, and radiological agents may be stored/kept including corridors, linear equipment rooms, the Freezer Farm, common equipment rooms, environmental rooms, freezers, or any other storage location/method.
 - c. Departmental administrators should contact other lab personnel in their department to assist in decontamination activities. EH&S can be contacted for possible outside vendors as a possible solution to assist the lab with particular issues.

D. EH&S Radiation Safety Unit (RSU)

1. All Permit Holders must contact RSU at least **4 weeks** before relocating.
2. The PI will be advised on the necessary requirements and precautions to be taken during transfer of radioactive materials.

3. The RSU will collect all radioactive waste containers not being transferred to the new facility.
4. Upon completion of a survey and verification of decontamination by the PI or the department, the RSU will conduct a final confirmatory radiological survey of the facility. The RSU will verify that the equipment used to store or analyze radioactive materials is appropriately decontaminated. The PI will be notified of the radiological survey results. If contamination is identified, lab personnel will be responsible for any additional decontamination necessary. The laboratory will be re-evaluated as necessary until decontamination has been confirmed. For information on equipment decontamination, contact the Radiation Safety Unit or refer to the Radiation Safety Manual.

E. EH&S Laboratory Safety Unit

1. The PI or the department must notify EH&S Laboratory Safety Unit at least **4 weeks** in advance of the planned lab closure. Upon notification by the PI or the department that the decontamination/clean out is completed, the Laboratory Safety Unit will schedule an appointment to verify the following activities have occurred:
 - a. **All chemical and biological materials have been properly removed, disposed and/or stored;**
 - b. **All non-fixed and special in-house equipment/supplies/wastes have been removed; all drawers and cabinets have been emptied, fume hoods are free of materials, and biological safety cabinets have been decontaminated;**
 - c. **All sharps (needles, razor blades, etc.) have been removed from cabinets, drawers and other surfaces and placed into sharps containers; and,**
 - d. **All counter tops have been cleaned to remove gross contamination.**
2. Upon verification that the required decontamination/clean out is complete, the Laboratory Safety Unit will complete a Laboratory Decommissioning Form (see Appendix 2). The Laboratory Decommissioning Form will be posted on the outer door to the lab or decommissioned space.
3. The PI/Supervisor will be responsible for any additional actions that may be needed. Upon completion of the additional decontamination activities and a successful evaluation by EH&S, the area will be released for renovation, demolition, construction, and/or reuse to the necessary parties. The Laboratory Decommissioning Form is to remain on the door to the laboratory until the space is reoccupied.

F. EH&S Environmental Compliance Hazardous Waste Group

1. The PI/Supervisor, or the department, must complete a Chematix waste

tag for each chemical container for disposal. The lab must notify the Hazardous Waste Group using Chematix once the hazardous waste is ready for pickup. The lab staff must take the following actions prior to the removal of any hazardous waste:

- a. Print and place the Chematix waste tag to each container to be removed from the lab. The tag is specific for that container and allows the Hazardous Waste Group to track the container.
 - b. Waste containers must be suitable for transport (container compatible with the waste, tight fitting caps, the container not over-filled (3/4 full), and the outside of the containers must be clean).
2. Additional information regarding the disposal of chemicals is available upon request. However, prior to discarding unwanted chemical(s) that are still viable, please work with your department and/or other departments to arrange for reuse/recycling.
- G. Facilities' MC/RC Construction Renovation Groups, Campus Planning, Project Management (PPM)
1. For lab renovations, the Project and Planning Management, PPM, or the Facilities manager may utilize outside construction contractors and/or internal personnel. **If a lab has NOT completed the decommissioning process, construction work must not proceed.** Failure to notify EH&S prior to the start of the construction may delay a project. To avoid delays, the Project Manager or Facilities Supervisor is to:
 - a. Contact EH&S to verify a Laboratory Decommissioning has taken place if the required door signage is not present prior to any planned work or demolition.
 - b. Have the contractors formulate a work plan for the construction project. **Although the laboratory spaces have been cleared of any gross contamination, there could be unseen hazards present that could pose a hazard to the contractors. Contractors must utilize appropriate personal protective equipment to minimize potential exposures.**
 2. Many Facilities Shops are required to perform general maintenance activities in active laboratories. These activities may include, but are not limited to, repairing gas lines, working on plumbing lines, adjusting fume hood controls, removing or adding cabinets, maintenance of HVAC systems, and painting. **These activities do not require EH&S to perform decommissioning of the space.** However, Facilities must ask the occupants to identify the hazards present in the immediate work location, to have these hazards removed/eliminated from the immediate location, and terminate work in the immediate space for the duration of the work. For example: Should a repair be needed to unclog a waste (sewer) line at a sink, materials stored in or under the sink must be removed, the floor in front of the cabinet cleaned by the occupants (if

visibly contaminated), and the occupants cannot use the sink until repairs are completed.

IV. EXPECTATIONS

The following photos are provided to demonstrate the expectations of the laboratory decommissioning process in removing potential hazards and cleaning surfaces so the space can be reoccupied or ready for a contractor to renovate:

Before cleaning/decommissioning



Completed decommissioning



As shown, all the non-fixed equipment, chemicals, and materials were removed from the benches, shelves, and drawers. The gas cylinders returned to the vendor, and some of the equipment was recycled (metal and electronics). All bench tops were washed down and disinfected appropriately. This cleanliness is the expectation of this program.

RELATED DOCUMENTS:

Radiation Safety:

Radiation Safety Manual:

<http://extranet.urmc.rochester.edu/radiationSafety/RSMRev00.pdf>

Radioactive Materials Permit Amendment Request Form

http://extranet.urmc.rochester.edu/radiationSafety/RSU_Form_007.pdf

Environmental Compliance:

Learners Guide to Hazardous Waste Management:

http://www.safety.rochester.edu/envcompliance/pdf/BlueLearnerGuide_new.pdf

Frequently Asked Questions:

<http://www.safety.rochester.edu/envcompliance/hazmatfaq.html>

Laboratory Safety Unit:

Bloodborne Pathogens Standard: <http://www.safety.rochester.edu/ih/bbpindex.html>

Chemical Hygiene Program:

<http://www.safety.rochester.edu/labsafety/chp/chpindex.html>

Contaminated Systems: <http://www.safety.rochester.edu/ih/guidelines/contam.html>

TECHNICAL SUPPORT:

Contact the following groups for further information:

- a. EH&S Laboratory Safety Unit (275-3241): For contractor information to decontaminate a biological safety cabinet, for information on biological, chemical, and physical hazard issues, and to schedule a decommissioning survey.
- b. Environmental Compliance's Hazardous Waste Group (275-2056): For issues relating to chemical waste (hazardous waste) disposal.
- c. The Radiation Safety Unit (275-3781): For radiological site evaluations and radioactive materials disposal or transfers.

REFERENCES TO STATE AND FEDERAL REGULATIONS:

Hazard Communication Standard (29 CFR 1910.1200)

The Resource Conservation and Recovery Act (RCRA)

NRC Regulations (10 CFR 20.1404 & 10 CFR 30.4)

Chemical Hygiene Standard (29 CFR 1910.1450)

Blood Borne Pathogens Program (29 CFR 1910.1030)

NYSDEC 10NYCRR Part 16 & 6NYCRR370

Appendix 1 Laboratory Equipment Clearance Form

Complete this form and affix to your lab equipment for any/all of the following actions:

- Removal for service or maintenance
- Relocation from the area of use
- Equipment designated out-of-service
- Equipment removed for storage, sale, transfer of ownership, or disposal

PI / Supervisor: _____ Equipment Item: _____

Department: _____ Model Number: _____

Building/Room#: _____ Serial Number: _____

Identify contaminants (before cleaning/decontamination has occurred):

___ Chemical ___ Biological ___ Radioactive ___ No hazard

Record the actions taken for the item identified above:

All materials removed from equipment (circle response)	YES	NO
All Surfaces cleaned (circle response)?	YES	NO
For surfaces cleaned, list the cleaning agent used \Rightarrow		
Surfaces decontaminated (circle response)?	YES	NO
For surface decontamination, list the disinfectant or decontamination agent (s) used: \Rightarrow		
Warning signs removed/covered over (circle response)?	YES	NO

Complete this section if radioactive materials were used/stored with this piece of equipment. **Radiation Safety must be contacted to conduct a survey and the result of the survey entered below:**

Radiation safety survey conducted (Circle response)?	YES	NO
Were all counts <200 dpm/100 cm ² (circle response)?	YES	NO
Is there an exception for this item (list, explain)? \Rightarrow		

All above actions completed by: _____ Date: _____

I attest that the lab equipment listed above is free of hazardous components and the surfaces have been decontaminated to remove gross contamination of chemical, biological, and radioactivity. It is safe for personnel to service, relocate, or dispose of this item.

Signature, PI/Supervisor

Date

NOTES:

ITEMS CONTAINING A REFRIGERANT MUST HAVE THE REFRIGERANT REMOVED BY THE FACILITIES REFRIGERATION SHOP

BIOLOGICAL SAFETY CABINETS (BSCs) USED FOR BIOLOGICAL AGENTS MUST BE DECONTAMINATED BY A CERTIFIED OUTSIDE CONTRACTOR.

Appendix 2
University of Rochester Laboratory Decommissioning Form

This form is for use and completed by Environmental Health & Safety only. A copy of this document will be posted on the door of laboratories surveyed and will be provided to the Department. This form can be removed after occupancy by the new users.

PI/ Supervisor:		Building:	
Department:		Room #	
Phone No.:		Date::	

Compliance Activity	Survey Findings		
Check applicable boxes	YES	NO	N/A
Door signage removed			
All compressed gas cylinders have been removed			
All non-fixed equipment removed			
All chemicals have been removed			
Drawers and cabinets are empty and free of gross contamination			
All work surfaces have been cleaned and are free of gross contamination			
Radiation Safety's survey found lab free of radioactive contamination			
All biohazards have been removed			
Biosafety Cabinet(s) have been decontaminated by outside vendor			
Fume hood(s) are free of gross contamination			
General cleanliness & hygiene acceptable			
Other:			

Conditional Lab Decommissioning Approval: YES NO

Conditional Issues:

Lab Decommission Approved: YES NO

Inspector Signature: _____ Date: _____

NOTE:

Contractors must establish appropriate work practices to maintain safe working conditions in areas to be renovated. At all times, appropriate PPE must be worn as outlined in the contractor's safe work plan. If additional information is needed, contact UofR EH&S at 275-3241.

New occupants can request Environmental Services clean the laboratory prior to occupancy.