



Laboratory Decontamination and Decommissioning

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1. Purpose and Scope

- 1.1. It is the policy of Boston University and Boston Medical Center that laboratory decommissioning take place prior to the re-certification or relocation of any laboratory space or upon vacating laboratory space or leaving either institution.
- 1.2. This policy is intended to minimize research and clinical lab downtime due to moving of a laboratory, and to protect contractors, laboratory personnel, and any other personnel involved in the process from laboratory hazards.
- 1.3. This policy applies to all Boston Medical Center and Boston University employees and tenants occupying laboratory space within Boston Medical Center or Boston University buildings.

2. References

2.1. Regulations

- 2.1.1. 29 CFR 1910.1450 - Occupational Exposure to Hazardous Chemicals In Laboratories
- 2.1.2. 29 CFR 1910.1030 – Occupational Exposure to Bloodborne Pathogens
- 2.1.3. Biosafety in Microbiological and Biomedical Laboratories, 5th Edition
- 2.1.4. NIH Guideline for Research Involving Recombinant DNA Molecules
- 2.1.5. 42 CFR Part 72 and 73 Possession, Use and Transfer of Select Agents and Toxins
- 2.1.6. 49 CFR DOT Hazardous Materials Transportation
- 2.1.7. IATA Dangerous Transportation

2.2 BU Policies

- 2.2.1. Chemical Hygiene Plan
- 2.2.2. Biosafety Manual
- 2.2.3. Institutional Animal Care and Use Committee
- 2.2.4. Institutional Biosafety Committee
- 2.2.5. Laboratory Safety Committees
- 2.2.6. Radiation Safety Committee

3. Definitions

- 3.1. “Abandoned Laboratory”. A clinical or research laboratory that is left vacant by a Principal Investigator or Laboratory Safety Coordinator and his/her laboratory staff, and has laboratory materials (biological, surplus chemical, radioactive), equipment or waste that has not been disposed of.
- 3.2. “Biological Materials”. All human, plant and animal pathogens; all human blood, blood components and products, tissues and body fluids; all human and animal cultured cells; all infected animals and animal tissues; all cultures/stocks of biological agents including

recombinant DNA materials; and all biological toxins. Also includes biomedical waste and physically dangerous (sharp) waste.

- 3.3. “Decommissioning”. The process whereby a Principal Investigator or Laboratory Safety Coordinator and his/her laboratory staff decontaminate existing laboratory space and make a clinical or research laboratory safe prior to vacating the space.
- 3.4. “Decontamination”. The process whereby the Principal Investigator or Laboratory Safety Coordinator and his/her laboratory staff clean and disinfect laboratory surfaces and equipment so they are safe to handle.
- 3.5. “EHS Departmental Safety Advisor”. An employee of Environmental Health and Safety (EHS) assigned to serve as a primary point of contact for all of the laboratory’s EHS needs.
- 3.6. “Hazardous Materials”. Substances which have hazardous characteristics such as: flammable, corrosive, reactive, toxic, radioactive, poisonous, carcinogenic or infectious. In a general sense, these materials are considered hazardous because they present a potential risk to humans and/or the environment.
- 3.7. “Re-certification” A process of ensuring the continued safe operation of Boston University and Boston Medical Center Biosafety Level Three laboratories through an annual maintenance program.

4. Roles & Responsibilities

- 4.1. The Principal Investigator or Laboratory Safety Coordinator is responsible for the complete decommissioning of the laboratory space prior to vacating the laboratory. In cases where an abandoned lab is identified, the department that the PI reported to will be responsible for the decommissioning and all costs associated with the process. If the laboratory used radioactive materials, they must complete a Radiological Equipment Release Survey Request, available on the Radiation Safety and Medical Physics website at <http://www.bu.edu/ehs/programs/radiation/radioisotope-safety/radiological-equipment-release-survey/decommision-form/>. The PI or LSC are also responsible for communicating this procedure to vendors, contractors, and others performing service or disposing of equipment in the laboratory.
- 4.2. Environmental Health and Safety (EHS) will distribute this policy and attachments and advise Principal Investigators, Laboratory Safety Coordinators and laboratory personnel on how to implement the various aspects of the policy. They will also verify that a lab has been appropriately decommissioned before a Principal Investigator or Laboratory Safety Coordinator may leave or move his or her laboratory.
- 4.3. The Move Coordinator for the laboratory is appointed by the Principal Investigator or Laboratory Safety Coordinator and is responsible for coordinating the laboratory decommissioning and move. The Move Coordinator is the primary contact with EHS.

- 4.4. Other Personnel (Facilities, Moving Personnel, and Contractors) should be aware of this policy and should not handle laboratory materials, equipment or waste unless instructed to do so by their supervisor and/or EHS.

5. Special Requirements

6. Applicable Locations

- 6.1. This procedure applies to all laboratories at Boston University and Boston Medical Center.

7. Procedures and Instructions

- 7.1. Prior planning is key to a successful laboratory decommissioning and move. Your preparation and communication with your EHS Departmental Safety advisor will be a major factor in minimizing delays, protecting your property against damage and loss, and most importantly, reducing the potential for personal injury. Contact EHS if you have any questions or need assistance.

7.2. Waste Disposal

- 7.2.1. All chemical, biological and radioactive wastes must be disposed of according to current EHS policies and procedures.
- 7.2.2. Any waste, including boxes and trash must not be left in corridors or left behind in the laboratory without prior arrangements. Prior arrangements for regular trash must be made with BU or BMC Facilities. Prior arrangements for other wastes can be made with EHS.
- 7.2.3. Chemical waste must be labeled with hazardous waste labels regardless of whether they are labeled or not from the manufacturer.
- 7.2.4. Unwanted, unopened, or uncontaminated chemicals can be offered to other labs that may be able to use them before being considered for disposal. Contact your EHS Departmental Safety Advisor for more information.
- 7.2.5. Any unknown chemical must be identified and labeled as hazardous waste. For chemical unknowns that cannot be identified by the Principal Investigator, Laboratory Safety Coordinator or laboratory personnel, the laboratory may be assessed a service fee for hazardous waste analysis prior to disposal.
- 7.2.6. Dark room tanks must be drained and the contents disposed of as hazardous waste.
- 7.2.7. Empty compressed gas tanks must be returned to the distributor prior to the move.

7.2.8. Mercury thermometers must be removed from equipment and disposed of as hazardous waste

7.2.9. Vacuum pumps must be drained of oil and the oil disposed of as hazardous waste.

7.2.10. Sharps must be collected and disposed of as hazardous waste.

7.3. Decontamination

7.3.1. All laboratory bench-top surfaces must be decontaminated prior to vacating the laboratory. All laboratory equipment must also be decontaminated, regardless of whether it is remaining in the laboratory, being moved to a new laboratory or being disposed.

7.3.2. Fume hoods must also be decontaminated. Contact your EHS Departmental Safety Advisor for decontamination and certification advice. Notify EHS if there is any current or past practices that may reveal potential problems. Certain chemicals such as perchloric acid and mercury may remain on surfaces or equipment or in building systems.

7.3.3. Biological Safety Cabinets, tissue culture hoods, and glove boxes that have been used with potentially infectious materials must be decontaminated by a qualified outside contractor. This equipment must also be re-certified after they have been moved. If you have biological safety cabinets, tissue culture hoods, or glove boxes that are either being moved to new laboratory areas or being left behind, contact your EHS Departmental Safety Advisor to discuss decontamination well in advance of the move.

7.3.4. An appropriate disinfectant must be utilized in cases where biological materials were in use. A disinfectant is deemed appropriate if it targets the biological materials that were in use in the laboratory. In most cases, 70% ethanol, bleach solution (1:10 made fresh), or a phenolic disinfectant should be adequate for disinfection of lab fixtures, furniture and equipment potentially contaminated with biological materials. Ideally, an appropriate disinfectant should be identified on the approved Institutional Biosafety Committee (IBC) protocol. If you have specific concerns, contact your EHS Departmental Safety Advisor.

7.3.5. Areas that have used radioactive materials have additional decontamination requirements. Contact Radiation Safety and Medical Physics for more information. Complete a Radiological Equipment Release Survey Request, available on the Radiation Safety website at:

<http://www.bu.edu/ehs/programs/radiation/radioisotope-safety/radiological-equipment-release-survey/decommission-form/>

- 7.3.6. The “BU Equipment Decontamination Record” sticker must be affixed to all equipment that has been decontaminated. This will allow moving personnel to safely move the equipment to the new laboratory space. Only equipment with this sticker will be moved. For equipment such as refrigerators used in non-laboratory areas in laboratory buildings, a “Non-Laboratory Equipment Sticker” should be affixed instead. Stickers may be obtained from your EHS Departmental Safety Advisor.
- 7.3.7. The Principal Investigator or Laboratory Safety Coordinator must complete the “Laboratory Decontamination Certification Form” and submit the form to the EHS Departmental Safety Advisor when decontamination and decommissioning activities are completed. This will allow EHS personnel to review the decommissioning activities, visit the decommissioned laboratory, and alert the appropriate administrative personnel that the decommissioning has been performed. Upon receipt of the completed form, EHS will contact the Principal Investigator or Laboratory Safety Coordinator to schedule a tour of the laboratory to confirm the decommissioning activities and deliver “BU Equipment Decontamination Record” stickers. The completed form is valid for fifteen (15) days. Equipment must be moved or disposed of within 15 days or a new certificate must be filed.
- 7.3.8. All waste and trash must be removed from the laboratory following the move. Be sure to check that EVERY drawer, cabinet, etc. is empty. Ensure that no sharps or trash are left behind in cup sinks on the benches or the fume hoods. Visible contamination, dirt, dust, etc. must be cleaned.
- 7.3.9. For further information regarding proper disinfection or decontamination procedures, contact your EHS Departmental Safety Advisor.

7.4. Designation of New Laboratory Space

- 7.4.1. The Principal Investigator or Laboratory Safety Coordinator must inform the EHS Departmental Safety Advisor of any new laboratory space.
- 7.4.2. The Principal Investigator is responsible for notifying all applicable Boston University Research Committees and outside agencies, as necessary, of the move to new laboratory space. Radioisotope Use Permits must be amended and approved by Radiation Safety Office and the Radiation Safety Committee prior to location change. Research projects approved by the Institutional Biosafety Committee or the Institutional Animal Care and Use Committee or involving radiation must have updated laboratory location information. USDA Veterinary Service or Plant Service permits are laboratory site specific, as are CDC Select Agent registration permits. Contact your EHS Departmental Safety Advisor for assistance.
- 7.4.3. The PI’s laboratory locations in the Research Information Management System (RIMS) must be updated. Chemical inventories should be transferred to the new locations. Contact your EHS Departmental Safety Advisor for more information.

7.5. Packing and Moving Laboratory Materials

7.5.1. Laboratory personnel are responsible for collecting all packaging items needed before the move date. Carts, plastic bags, towels or other cushioning, absorbent materials, sealable plastic or plastic-lined boxes, labels (e.g. Fragile, Universal Biohazard, ID, Location, associated hazard), sturdy tape, and spill kits should be readily accessible. Each container or piece of equipment must be labeled. Labels must identify the agent, hazard and necessary precautions.

7.5.2. The Principal Investigator or Laboratory Safety Coordinator is responsible for establishing safety and emergency procedures for all phases of the move. Potential emergencies include material spills, fires, slips and falls, and cuts. Protective clothing and spill absorbent materials must be available during packing, moving, and unpacking.

7.5.3. Packing and Moving Laboratory Chemicals

7.5.3.1. In order to minimize the amount of chemicals that need to be packed and moved, new chemicals should be ordered only as necessary and in small quantities. Laboratory personnel should plan in advance to minimize the inventory of liquid volume and weight of materials being moved. In addition, reduction of active materials should be planned the week prior to the move.

7.5.3.2. In most cases, laboratory chemicals must be packed and moved by an outside contractor approved by EHS. Prior to the packing and moving, laboratory personnel are responsible for labeling each chemical container with the chemical identity.

7.5.3.3. Compressed Gas cylinders that are to be moved must have regulators removed and caps secured prior to moving. If possible, have old tanks collected by the vendor prior to move and arrange for future tanks to be delivered to the new location.

7.5.3.4. Thermometers must be removed from refrigerators, water baths, and incubators prior to equipment moving. Mercury thermometers must be disposed of as hazardous waste.

7.5.3.5. Oil must be drained from pumps, baths, and other equipment moving.

7.5.4. Packing and Moving Biological Materials

7.5.4.1. Biological Materials must be appropriately packed and moved by the laboratory personnel within the campus or by an EHS-approved vendor if it is leaving campus. Regulated materials and biological materials include all human, plant and animal pathogens; all human blood, blood components and products, tissues and body fluids; all human and animal cultured cells; all

infected animals and animal tissues; all cultures/stocks of biological agents including recombinant DNA materials; and all biological toxins. See the Boston University Biosafety Manual or contact your EHS Departmental Safety Advisor for more information.

7.5.4.2. Proper Packaging consists of a primary sealed container placed within a secondary sealed, unbreakable container, with enough absorbent material in between to contain and absorb any spill. *Some examples of proper packaging include:* petri dishes in a plastic sleeve within a plastic lined box using paper towel spacers, stabs in a sealed Tupperware container with paper towels to cushion vials, sealed tubes in a rack placed into plastic sealable container with enough paper towels to absorb any spilled contents, tissue culture dishes placed into a plastic lined dishpan or a sealable cardboard box with an absorbent. Freezers can be moved intact, provided all contents are in sealed, unbreakable containers, the freezer remains closed, and the exterior of the freezer has been decontaminated. Because shifting of contents may occur, enclose loose items in boxes, or fix in some other way to avoid breakage and spills when the freezer is reopened. Other equipment, such as fermenters, incubators, and biosafety cabinets must be empty and decontaminated prior to the move. Refrigerators and other storage equipment can be moved intact at the discretion of EHS. Contact EHS for more information.

7.5.4.3. Labeling. Once packaged, all biological materials must be properly labeled. *Labels must include:* Name, Principal Investigator (PI), new location, ID of agent, biosafety level, telephone number for assistance in the event of any breakage, and a FRAGILE notice if applicable. Also use the Universal Biohazard label whenever packaging a biosafety level 2 (BL2) or higher agent. If you are not sure of the biosafety level of your biological materials, or need Biohazard labels or other assistance, contact your EHS Departmental Safety Advisor.

7.6. Laboratory Furniture and Equipment

7.6.1. Furniture. The move coordinator must be informed if there is any furniture of particular concern (fragile, valuable, requires dismantling), not already mentioned. different moving companies may have different requirements that should be ascertained in advance of the move

7.6.2. Special Requirements. The move coordinator must be informed in advance of any equipment under service contract as well as equipment not under contract but requiring servicing and/or special handling.

7.6.3. Alarms. Laboratory personnel must disconnect alarms on freezers (if moving intact) and any other sensor alarms on or before the day of the move.

7.6.4. Keys and Combinations. Laboratory personnel must keep keys and combinations to locks readily accessible.

8. Forms

- 8.1. Laboratory Decontamination and Certification Form
- 8.2. BU Equipment Decontamination Record Sticker
- 8.3. BU Non-Laboratory Equipment Sticker

9. Records Management

- 9.1. The Principal Investigator or Laboratory Safety Coordinator must return the Laboratory Decontamination and Certification Form to the EHS Departmental Safety Advisor.
- 9.2. The completed Laboratory Decon Certificates will be kept on file at EHS.

10. SOP Revision History

Version	Section / Paragraph Changed	Changes Made	Effective Date
V.1	N/A	None, Original Version	6/16/08
V.2	Throughout	Changed to new EHS program format, updated EHS terminology (Department Safety Advisor, etc.). added 15 day expiration for Lab Decontamination Certification Form, added information regarding RIMS.	10/15/10
V.2.1	2.2.6, 3.1, 3.6, 4.1, 7.2.1, 7.3.5, 7.4.2	Updated information regarding Radiation Safety decommissioning and Radiation Safety Committee and RSO approvals.	10/19/10
V.2.2	4.1	Updated roles and responsibilities of the PI and LSC	5/11/11
V.2.3	6, 7.3.6, 8.3	Grammatical fix in 6. Added info on Non-Laboratory Equipment Sticker.	10/24/2011