



Laboratory Decontamination and Decommissioning Policy and Procedures

**Office of Environmental Health
and Safety**

July 2018

1. Purpose and Scope

- 1.1 It is the policy of Cleveland State University 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. Notifying in writing to the Office of Environmental Health and Safety (EHS) prior for intentions to decommission, relocate or move is needed.
- 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 Cleveland State University employees and tenants occupying laboratory space within Cleveland State or Cleveland State University buildings.

2. Definitions

- 2.1. “Abandoned Laboratory”. A laboratory that is left vacant by a Lab Supervisor or Laboratory Safety Coordinator and his/her laboratory staff, and has laboratory materials (biological, chemical, radioactive), equipment or waste that has not been disposed of.
- 2.2. “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.
- 2.3. “Decommissioning”. The process whereby a Lab Supervisor or Laboratory Safety Coordinator and his/her laboratory staff decontaminate/decommission existing laboratory space and make a clinical or research laboratory safe prior to vacating the space.
- 2.4. “Decontamination”. The process whereby the Lab Supervisor or Laboratory Safety Coordinator and his/her laboratory staff clean and disinfect laboratory surfaces and equipment so they are safe to handle.
- 2.5. “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.

- 2.6. “Re-certification” A process of ensuring the continued safe operation all Cleveland State University labs when commissioned

3. Roles & Responsibilities

- 3.1. The Lab Supervisor 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 Lab Supervisor reported to will be responsible for the decommissioning and all costs associated with the process (including the removal of all non and hazardous wastes including radioactive and biological waste) and the recertification (requiring an environmental cleaning company to come in and clean all surfaces and equipment). If the laboratory used radioactive materials, they must contact Environmental Health and Safety’s Radiation Safety Officer for information. The Lab Supervisor or Lab Safety Coordinator is also responsible for communicating this procedure to vendors, contractors, EHS and others performing services or disposing of equipment, removing chemicals or cleaning the laboratory.
- 3.2. EHS will distribute this policy and attachments and advise Lab Supervisors/Deans/Chairs, 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 (cleaned, decontaminated, etc.) before a Lab Supervisor or Laboratory Safety Coordinator may leave or move his or her laboratory.
- 3.3. The Move Coordinator is the Lab Supervisor or Laboratory Safety Coordinator and is responsible for coordinating the laboratory decommissioning and move. The Lab Supervisor and Lab Safety Coordinator is the primary contact with EHS.
- 3.4. Other Personnel (Facilities, Movers, and Contractors and others) should be aware of this policy and should not handle laboratory materials, equipment or waste unless instructed to do so by Lab Supervisor and/or EHS. The Lab Supervisor or Laboratory Safety Coordinator is charged with making this policy known to the above mentioned.

4. Applicable Locations

- 4.1. This procedure applies to all laboratories at Cleveland State University

5. Procedures and Instructions

- 5.1. Prior planning is key to a successful laboratory decommissioning and move along with close of examination the Laboratory Decontamination and Decommission Policy. Your preparation and communication with your Office of

Environmental Health and Safety will be a major factor in minimizing delays, protecting your property against damage and loss, and most importantly, reducing the potential for personal injury and spills or contamination. Contact EHS if you have any questions or need assistance.

5.2. Waste Disposal

- 5.2.1. All chemical, biological and radioactive wastes must be disposed of according to current EHS policies and procedures. EHS will use current vendors for a quote and the college in question will address such costs associated with the removals.
- 5.2.2. 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 CSU Facilities. Prior arrangements for other wastes can be made with EHS with regards to chemicals or certified cleaning.
- 5.2.3. Unopened chemicals can be offered to other labs that may be able to use them before being considered for disposal. Contact the EHS for consideration. Other laboratory items are at the discretion of EHS and its removal standards (chemicals, equipment, etc.).
- 5.2.4. Any unknown chemical must be identified and labeled as hazardous waste. For chemical unknowns that cannot be identified by the Lab Supervisor, Laboratory Safety Coordinator or laboratory personnel, the laboratory may be assessed a service fee for hazardous waste analysis prior to disposal.
- 5.2.5. Dark room tanks must be drained and the contents disposed of as hazardous waste.
- 5.2.6. Empty compressed gas tanks must be returned to the distributor prior to the move.
- 5.2.7. Mercury thermometers or Mercury containing equipment must be removed from equipment and disposed of as hazardous waste.
- 5.2.8. Vacuum pumps must be drained of oil and the oil disposed of properly.
- 5.2.9. Sharps must be collected and disposed of as Infectious Waste.

5.3. Decontamination

- 5.3.1. 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.

- 5.3.2. Fume hoods must also be decontaminated by a certified contractor. Contact EHS 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.
- 5.3.3. Biological or Safety Cabinets, tissue culture hoods, and glove boxes that have been used with potentially infectious materials must be decontaminated by a qualified outside environmental contractor. This equipment must also be “re-certified” after they have been moved. If you have biological or safety cabinets, tissue culture hoods, or glove boxes that are either being moved to new laboratory areas or being left behind, contact EHS to discuss decontamination well in advance of the move.
- 5.3.4. 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. An appropriate disinfectant should be identified and approved before measures are taken place by an environmental cleaning crew are to begin. Always contact EHS before move, relocation or decommission.
- 5.3.5. Areas that have used radioactive materials have additional decontamination requirements. Contact EHS and the Radiation Safety Officer for additional information.
- 5.3.6. A CSU decontamination record sticker must be affixed to all equipment that has been decontaminated by an environmental cleaning crew. This will allow moving personnel to safely move the equipment to the new laboratory space or equipment that needs to be discarded or removed as hazardous waste.
- 5.3.7. The Lab Supervisor or Laboratory Safety Coordinator must receive complete decontamination information regarding all cleaning activities or future activities, and submit the form to EHS. EHS needs all documents as decontamination and decommissioning activities are completed or beginning. 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 or begun. Upon receipt of the completed information, EHS will contact the Lab Supervisor or Laboratory Safety Coordinator to schedule a tour of the laboratory to confirm the decommissioning activities and deem the area “cleaned”. Equipment must be moved or disposed of. If hazardous, radiation or infectious waste needs to be removed, EHS will contact their current waste hauler for removal and receive a quote for decommission process and have respected department incur such costs for removal.

- 5.3.8. 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 and evaluated by an environmental cleaning company.
- 5.3.9. Contact EHS for further information regarding proper disinfection or decontamination procedures.

5.4. Designation of New Laboratory Space

- 5.4.1. The Lab Supervisor or Laboratory Safety Coordinator must inform EHS of any new laboratory space.
- 5.4.2. The Lab Supervisor is responsible for notifying all applicable CSU Committees/departments and outside agencies, as necessary, of the move to new laboratory space. Radioisotope use must be amended and approved by Radiation Safety Officer and the Radiation Safety Committee prior to location change. Research projects approved by the Institutional Animal Care and Use Committee (IACUC) or involving radiation must have updated laboratory location information and involve committees as such. USDA Veterinary Service permits are laboratory site specific (depending on covered species), as are CDC/NRC select agent registration permits depending on research and facility are as needed. Contact EHS and/or the Animal Care Facility for additional information.
- 5.4.3. EHS must be notified the Lab Supervisor’s new laboratory locations and any new information regarding the new laboratory and research/use of the space. Chemical inventories should be transferred to the new locations and EHS made aware of these transfers. Contact EHS for additional information.

5.5. Packing and Moving Laboratory Materials

- 5.5.1. 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, and associated hazard), sturdy tape, and spill kits should be readily accessible. Contact EHS for assistance if spill kit supplies are needed before project (EHS has limited supplies). Any special supplies will be purchased at a cost to the department. Each container or piece of equipment must be labeled. Labels must identify the agent, hazard and necessary precautions.

- 5.5.2. The Lab Supervisor 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.

5.6. Packing and Moving Laboratory Chemicals

- 5.6.1 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.
- 5.6.2 In most cases, laboratory chemicals must be packed and or removed by an outside contractor approved by EHS. Prior to the packing and or removing, laboratory personnel are responsible for labeling each chemical container with the chemical identity. If needed, EHS will contact the current waste hauler for remove or relocation and receive a quote for the process and have respected department incur such costs for removal.
- 5.6.3 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 locations.
- 5.6.4 Thermometers must be removed from refrigerators, water baths, and incubators prior to equipment moving. Mercury thermometers must be disposed of as hazardous waste. Contact EHS for additional information.
- 5.6.5 Oil must be drained from pumps, baths and other equipment.

5.7. Packing and Moving Biological Materials

- 5.7.1. 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 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. Contact EHS for additional information.

5.7.2. 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/safety 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.

5.7.3. Labeling. Once packaged, all biological, hazardous and non-hazardous materials must be properly labeled. *Labels must include:* Name, Lab Supervisor, new location, ID of agent, safety level, telephone number for assistance in the event of any breakage, and a FRAGILE notice if applicable. If you are not sure of the biosafety level of your biological material, or need assistance, contact EHS6).

5.8. Laboratory Furniture and Equipment

5.8.1. 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.

5.8.2. 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.

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

5.8.4. Keys and Combinations. Laboratory personnel must keep keys & combinations locks readily accessible for emergency.

6. Forms

6.1. Laboratory Decontamination Form and Certification Forms (Appendix A) from an Environmental Cleaning Contractor.

6.2. Moving in New Lab Checklist (Appendix B)

7. Records Management

The Lab Supervisor or Laboratory Safety Coordinator must return the Laboratory Decontamination Forms to EHS. The completed Laboratory Decontamination Certifications/Letters will be kept on file at EHS.

- References:
- 2.1.1. 29 CFR 1910.1450 - Occupational Exposure to Hazardous Chemicals in Laboratories
 - 2.1.2. 29 CFR 1910.1030 – Occupational Exposure to Blood borne 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 Interstate Shipment of Etiologic Agents
 - 2.1.6. 42 CFR Part 73 Select Agents and Toxins
 - 2.1.7. 49 CFR DOT Hazardous Materials Transportation

Appendix A
Office of Environmental Health and Safety
Laboratory Decommissioning Certificate Form

Department: _____

Laboratory Location: Building _____ Room: _____

Laboratory Contact Person: _____ Telephone Number: _____

Date of Decommissioning Survey: _____

In preparation to vacate the laboratory listed above, I certify that:

1. All useful chemicals that have not been opened have been moved to another location (following laboratory decommission policy). **Yes/No:** _____
2. Chemicals have not been disposed in the normal refuse or via drain disposal. **Yes/No** _____
3. Unknown chemicals were labeled appropriately after consultation with EH&S. **Yes/No** _____
4. All chemical waste has been disposed through the EH&S hazardous waste program. **Yes/No** _____
5. All compressed gas cylinders have been returned to vendors. **Yes/No** _____
6. All biological materials have been destroyed or transferred to another authorized laboratory. **Yes/No** _____
7. All biological materials have been removed from freezers and refrigerators and or disposed of properly. **Yes/No** _____
8. All solid infectious materials and used supplies have been disposed in an infectious waste container. **Yes/No** _____
9. All radioactive materials have been transferred to another authorized user or disposed as radioactive waste in accordance with NRC Radiation Safety Office procedures. **Yes/No** _____
10. The Radiation Safety Officer has conducted an exit survey of the laboratory after the last use of radioactive materials. **Yes/No** _____
11. All unused supplies have been relocated to a new laboratory, or removed off site. **Yes/No** _____
12. All laboratory surface areas used for chemicals, including hoods and equipment, have been decontaminated and labeled has having been cleaned. **Yes/No** _____
13. Any biological safety cabinets have been emptied and all surfaces used for lab use have been cleaned by an Environmental Contractor. After cleaning, biohazard signs and labels have been removed from equipment and cabinets. **Yes/No** _____

14. Any areas that were impacted from a spill of chemicals, biological agents or radioactive materials have been identified to EH&S and decontaminated. **Yes/No** _____
15. Any areas or equipment that have been cleaned have been tagged with the appropriate warning labels and identified to EH&S and decontaminated. **Yes/No** _____

Lab Supervisor (i.e., Principal Investigator)

Date

Dean/Chair

Date

EH&S Representative

Date

I verify that the Lab Supervisor or Laboratory Safety Coordinator has inspected the laboratory and find the space and installed systems acceptable for reassignment. I verify that EH&S staff have conducted the laboratory decommissioning surveys and certify this laboratory to be decommissioned and cleaned by an Environmental Contractor.

Copies of this form will be provided to the Lab Supervisor, and the original shall be retained by EH&S.

Appendix B

MOVING IN NEW LABORATORY CHECKLIST

Use this checklist as a tool to help you get started with health and safety requirements. Refer to the Laboratory Safety Manual Section 10 - Moving In/Moving Out for more details.

General Safety

- If possible, visit the laboratory to determine if it will meet your needs, has been cleaned and is in good condition. If the lab had prior tenants, it should have a *Notice of Laboratory Moveout* posted inside one of the doors. If it does not, contact your Building Coordinator.
- Reserve an accessible area for storage of health and safety related documents, including Safety Data Sheets (SDSs), training records and your Chemical Hygiene Plan (CSU Laboratory Safety Manual)
- Keep areas uncluttered, reserving three feet of space in all aisles.
- Do not block exits or safety equipment such as showers and eyewash stations.

Emergency Planning

- Know locations of emergency showers and eye washes.
- Know the emergency escape routes. Contact your Building Coordinator for more information.
- Prepare and post a floor plan which includes locations of signs, safety equipment, and process-related equipment. Show direction of exit from the laboratory.
- Post emergency phone numbers next to telephone.
- Obtain chemical spill kit, biohazard spill kit (as needed), and first aid kit.
- Reserve an accessible area for spill kits and other emergency equipment.
- Keep tall cabinets, filing cabinets, and other furnishings away from doorways or secure them to the wall.

Facilities/Equipment

- Check test dates on the fume hoods, biosafety cabinets, fire extinguishers, and safety showers. To update fume hoods and biosafety cabinets, contact EH&S at 216-687-9306. To update fire extinguishers and safety showers, enter work order request through Facilities Services procedures (Refer to Appendix F, Lab Safety Manual for servicing Facilities Services.)
- To relocate or purchase a new biological safety cabinet (BSC), submit a Request to Purchase or Relocate a Biological Safety Cabinet to OEHS
- Any new fume hoods and BSCs are required to be tested and certified by EH&S before research can start. Contact EH&S at 216-687-9306 to schedule a test.
- If this is a newly constructed laboratory or if you have purchased new laboratory equipment, ensure that equipment has been certified for function before using chemicals, radioactive materials, or biological agents.

- If lab does not have fire extinguisher, request one through your Facilities Services. (Refer to Appendix F, Lab Safety Manual for servicing Facilities Services.)
- Ensure that gas cylinders are secured to walls or bench tops with two chains or straps. Complete a Facilities Services work order request to secure cylinders. (Refer to Appendix F, Lab Safety Manual for servicing Facilities Services.)

Chemical Safety

- Assess storage capacity for hazardous materials. Obtain approved storage cabinets as needed for flammable liquids (including flammable liquid wastes) so that the amount of flammable liquid outside a cabinet is always less than ten gallons. Obtain storage cabinets for acids and/or bases.

Fill out or update the Laboratory Specific Information in this Manual, including

- Laboratory floor plans
- General laboratory safety rules
 - Designations of individuals performing the following tasks
 - Chemical Hygiene Officer
 - Maintaining first aid supplies
 - Maintaining chemical inventories
 - Performing certain safety protocols
 - Any special instructions for receiving and storing hazardous materials
 - Locations and contents of chemical spill kits
 - Location of Emergency Plans
 - Location of SDSs and other safety reference materials if stored separately from the Laboratory Safety Manual
 - Operating procedures for equipment
 - Training records or location of same if stored separately from the Laboratory Safety Manual
 - Standard Operating Procedures for hazardous materials
- Segregate and store your chemicals correctly. Refer to this manual and our website for more information.

Make sure your chemical inventory is entered in the Chemical Security system.

- Update your contact information and location if you are an existing PI. EH&S can transfer your chemical inventories to your new location and help can be obtained by calling 216-687-9306.
- Call EH&S at 216-687-9306 to let them know that your inventory is new or has been updated

For questions or assistance concerning Chemical Inventories, call EH&S at 216-687-9306.

Biological Safety and Animal Research

- If your research involves work with select agents, notify EH&S at 216-687-9306 for authorization instructions.
- Maintain a Biosafety Manual with laboratory specific information included in the Biosafety Manual. See link

If you are working with blood or other potentially infectious materials, you must be included in the University's Bloodborne Pathogens Program. This requires a site specific Exposure Control Plan, annual training, and offering of hepatitis B vaccination. The CSU Exposure Control Plan is in the Biosafety Manual.

- Complete the Supplemental Form for Bloodborne Pathogens to complete your site specific ECP.

For questions or assistance, contact EH&S at 216-687-9306.

Radiation Safety

- New Principal Investigators:** Obtain an authorization to use radioactive materials. If this is a new

location, contact EH&S Radiation Safety as soon as possible to evaluate any special needs and potential for air emissions.

- Amend an existing authorization when adding workers or a changing a radionuclide use.
- Human Subjects:** Submit an application with EH&S to use radiation with human subjects.
- Make sure you have a way to keep radioactive stock solutions locked when not in use.
- Using radioactive materials may require additional constraints than those stated above (e.g. using iodine for labeling requires radioiodine hood and using large quantities of material may require dosimeters.)
- Using Lasers, non-ionizing radiation, EMF, RFR, etc requires that you contact RS for surveys, and evaluation.

For questions or assistance, contact EH&S Radiation Safety at 216-687-3715.

Hazardous Waste

- Reserve areas in your laboratory for safe hazardous waste accumulation as appropriate.
- New Principal Investigators:** Fill out the Hazardous Waste Inventory Sheet This is obtained at https://www.csuohio.edu/sites/default/files/hazardous_waste_inventory.pdf

