DEPARTMENT OF CHEMISTRY

LABORATORY CLOSURE AND DECOMMISSIONING POLICY

RATIONALE

To provide a framework for the Department of Chemistry to allow for a proper lab decommissioning process, prior to closure, renovation or transfer of lab occupancy. This policy clarifies the responsibilities for the decommissioning process as well as the financial responsibilities of the Chemistry Department and the Principal Investigator (PI).

BACKGROUND

Federal and provincial regulations*****, as well as UBC Policy 9 on Hazardous Materials Management, make it mandatory that PIs decommissioning their laboratories ensure that the legal and ethical expectations associated with termination of their research are met.

> ****Workplace Hazardous Materials Information System (WHMIS); Provincial and Federal Health, Safety and Environmental regulations; the Canadian Nuclear Safety and Control Act (2000); Health Canada and Canadian Food Inspection Agency***

An exit protocol ensures that:

- Unsafe conditions are eliminated;
- A proper clean-up is performed;
- Lab equipment is properly decontaminated and disposed of or recycled;
- Hazardous materials are properly disposed of or recycled/reused;
- Work surfaces are free of contamination;
- The health and safety of researchers, staff, hazardous waste contractors, construction and renovation personnel, and future occupants is protected;
- the risk of theft, diversion and misuse of materials that are unlabeled, unidentified, unstable, improperly stored, contaminated or improperly contained, is minimized;
- University policies and Departmental procedures are followed; and
- Regulatory requirements are met.

APPLICABILITY

This policy applies to:

- Research and teaching laboratories owned by UBC Chemistry or occupied by UBC Chemistry students, faculty, or staff.
- Laboratories that use chemicals, radioactive materials, biological materials, human pathogens, controlled substances, compressed gases, large equipment, mercury containing monitors, etc.
- Laboratories or ancillary research spaces (e.g., cold rooms, freezers in hallways) that are vacated by a PI.

- Laboratory space that is to be reused by a different PI, as well as laboratory space that is to be converted to another use.
- Movement of safety critical equipment.

NOTIFICATION

The vacating PI will inform the Department Head, Space Committee Chair and the Chemistry Department Safety Program Administrator (SPA) of his/her intention to vacate the laboratory space at least 90 days in advance of the anticipated departure date. The SPA will provide a copy of the Departmental Exit Protocol and, if applicable, will inform UBC Risk Management Services. The date of this information transfer should be documented. It is then the responsibility of the Department Head to ensure that all the steps in the exit protocol are followed to completion. The Department Head, at his discretion, may delegate the day-to-day supervision of this process to the SPA.

In extraordinary circumstances, if the vacating PI is incapacitated and unable to make such decisions, the Department Head may appoint another PI in similar research field to initiate and oversee the decommissioning process.

PRINCIPAL INVESTIGATOR (PI) RESPONSIBILITIES

Each PI is responsible for:

- Giving at least 90 days notice of laboratory vacancy to the Department Head, Space Committee Chair and the SPA. This ensures enough time for proper characterization and disposition of research materials and decontamination of laboratory equipment, fixtures, furniture and space. This procedure must be followed even if:
    - shared spaces is being vacated;
    - only a single room is to be vacated, and
    - the space is being assigned to another PI.
- Ensuring the safe handling/disposal of materials and equipment, including the safety and compliance of materials and equipment left behind in a vacated laboratory, if the laboratory is to be used by another PI.
- Ensuring that research material cleanouts are performed by staff knowledgeable of hazards and trained in all required safety disciplines.
- Ensuring that all chemicals, gases, and research materials are categorized and properly labeled.
- Informing the SPA prior to the shipment or movement of any hazardous materials or safety critical equipment, even if the move is from one room to another.
- Ensuring that the packing and shipping of any material or equipment be performed by trained individuals.
- All costs associated with laboratory cleanout, disposal, decontamination, and packing and shipping of materials.

Procedures:

- Complete a current inventory of all hazardous materials.
- Isolate and appropriately process all unknowns for disposal.
- Remove all chemicals from the laboratory by:
    - transfer to another PI,
    - disposal through UBC Environmental Services Facility (ESF), or
    - by off-campus contractor disposal.
- Remove all solid waste and glass waste containers, and all equipment not transferred to the future occupant of the space.
- Decontaminate and clean all fume-hoods, bio-safety cabinets, glove boxes and lab benches.
- Make special arrangements for the disposal of potentially explosive materials and lecture bottles of hazardous gases (contact SPA 7-5216 for assistance).
- Have the SPA inspect the laboratory and demonstrate approval of the process by signing the Lab Decommissioning Form.
- Send the Lab Decommissioning form to the Department Head. It is the responsibility of the Department Head to ensure that all procedures have been completed for the decommissioning of laboratories.
- In the case of building decommissioning, or when the area is to be renovated, or in swing spaces, the Building Operations Facility Manager should participate in the final lab inspection and acceptance of lab decommissioning.

Transfer of chemicals to another primary researcher or laboratory supervisor:

- All materials transferred must be labeled according to WHMIS requirements and the receiving party must obtain appropriate Material Safety Data Sheets. For further information please contact the Chemical Safety and Occupational Hygiene Associate at 604-822-2273.
- Prior to transferring radioactive materials to another licensee, contact the Radiation Safety Advisor at 604-822-7052.
- Some materials may be forwarded to the University Chemical Exchange Program for future use. Contact UBC Environmental Services Facility (2-6306).

Disposal of Chemicals:

- Establish the identity of all materials before disposal.
- Contact UBC ESF to arrange for identified materials to be classified for waste disposal purposes; there will be a cost associated with this process (approx. $100.00 - $150.00/hour).
- Make special arrangements for the disposal of potentially explosive materials or lecture bottles of hazardous gases by ESF approved contractor (contact ESF at 2-6306). Disposal costs are to be paid by the PI.

- Complete the chemical disposal inventory form for all chemicals ready for disposal and forwarded to the UBC Risk Management Services. Following approval by ESF staff, the materials must be packaged according to the instructions provided and then arrangements made with ESF at 822-6306 for pick-up of the material.
- Return compressed gas cylinders to suppliers.

Radioisotope Permit & Laboratory Decommissioning:

- Send a memo to the Radiation Safety Office (RSO) stating intent to discontinue the radioisotope permit.
- Conduct a complete set of wipe tests for each laboratory/room licensed for isotope use, regardless of radiation use, within the space. Refer to permit and associated amendments for the list of permitted rooms.
- Keep a record of proper disposal of all isotopes on hand. This can include a transfer of remaining isotope to another researcher that is licensed for that material or to the Radiation Safety Office.
- Complete the yearly isotope inventory (obtained from the RSO).
- Transfer all isotope purchase, use, disposal and contamination control records to the RSO.
- Following the completion of the above steps, the RSO staff will remove all signs and all records will be transferred to the RSO. The RSO will provide confirmation by letter to the PI, the Department Head and SPA, advising that the license is no longer active.
- Note that the decommissioning of laboratory space is not complete until receipt of the confirmation letter from the Radiation Safety Office.

Biohazard Laboratory Decommissioning:

- Notify the Bio-Safety Office (604-822-9527) and the Office of Research Services that the biohazard protocols are to be concluded and by what date.
- Record transfer of biohazardous materials to the inventory of another researcher.
- Ensure proper disposal of all biohazards not transferred to the inventory of another researcher.
- Decontaminate all working surfaces.
- If applicable, conclude liquid nitrogen delivery contract.

SPA RESPONSIBILITIES

Within the geographical limitations of the Chemistry Complex of buildings (ie Buildings A-E) the Safety Program Administrator is responsible for:

- Reviewing options and providing a checklist outlining processes for the PI to confirm that all requirements have been completed. The PI or lab supervisor will submit a completed exit protocol checklist to the SPA prior to departure.

- The SPA will document that the space being vacated is free of hazardous materials and contamination and a provided copies of the documentation to the PI for his/her records.
- A written report to the department (for new occupancy) or project manager (for space to undergo construction/renovation) will be provided by the SPA.
- Providing instructions and guidance to investigators and their staff in advance of all laboratory moves, closures and decontamination, including requirements for labeling and identification of research materials.
- Evaluating and providing guidance for the movement of research materials.
- Arranging for the removal and ultimate disposal of all properly labeled and classified research materials.
- If the laboratory and/or research materials are inappropriately left after the space is vacated, arranging for the proper disposal of materials and the decontamination of the space. All associated costs and fees will be charged directly to the vacating PI.

DEPARTMENTAL RESPONSIBILITIES

The Department is responsible for:

- Ensuring that the vacating and decontaminating of laboratory space, equipment, fixtures, and furniture is carried out in a safe, efficient, and timely manner.
- Assuming the costs of decontamination and disposal of research materials in situations where there has been a failure to meet the requirements listed in the Investigator Responsibilities section and those costs cannot be recovered from the investigator.
- Securing written approval from the SPA before reassigning vacated laboratory space or before initiating construction or renovation in vacated laboratory space.
- Ensuring that research material cleanouts be performed by staff knowledgeable of hazards and trained in all required safety disciplines, including temporary hires on an as needed basis.
- Appointing another PI in similar research area as the vacating PI for final inspection with SPA to authorize completion of the decommissioning process.

DEPARTMENT OF CHEMISTRY LABORATORY EXIT PROTOCOL CHECKLIST

90 days notification of PI's intention to vacate laboratory space given to Department Head, Space Committee Chair and Safety Program Administrator	**Insert date notified:**

	Yes	No	N/A
Chemical Hazards			
1. Create a complete inventory of all hazardous materials in the laboratory.			
2. Give a copy of the inventory to the SPA.			
3. Identify and isolate any unknowns for proper disposal (chemicals, etc.).			
4. Make arrangements for the disposal of lecture bottles of hazardous gases and potentially explosive chemicals.			
5. Check MSDS sheets for all known chemicals.			
6. Transfer chemicals to another PI’s inventory, arrange for disposal via the UBC Environmental Services Facility, or removal via off-campus contractor.			
7. Return compressed gas cylinders to the suppliers.			
8. Decontaminate all fumehoods, bio-safety cabinets, glove boxes, lab benches, shelves etc			
Radioisotope Hazards			
1. Notify the Radiation Safety Office (RSO) of intent to decommission the radioisotope permit.			
2. Perform a complete set of wipe tests in all licensed areas and submit to the RSO.			
3. Notify RSO regarding disposal of or transfer of radioisotopes to another licensee.			
4. Submit an annual inventory record to the RSO.			
5. Submit all radiation inventory and contamination control records to the RSO.			
Biohazards			
1. Notify the Bio-Safety Office of intent to terminate work with Biohazards.			
2. Notify Bio-Safety Office of disposal of and transfer of biohazardous materials to another researcher.			
3. Decontaminate all working surfaces and equipment.			
4. If applicable, terminate liquid cryogen contracts.			
Other			
1. Decontaminate/de-energize/recycle/dispose of specialized lab equipment safely.			
2. Safety Committee inspection of laboratory. [attach Exit Safety Inspection Report]			
3. If you will be transferring to a new laboratory or work area, provide UBC Risk Management Services with updated information for the hazard information door signs, specifically hazard information and emergency contact.			