

Research Operations Continuity

Temporary Shutdown Checklist for Laboratories

The following checklist is provided to assist researchers in their lab-specific preparations for ramping down research and temporary laboratory shutdown, should it become necessary. Please keep safety in mind and contact Environmental Health & Safety with questions or for assistance with risk assessment, safeguards, or hazardous materials management.

Priority Actions for Temporary Shutdown of All Laboratory Activities

- Shutdown and unplug heat sources (including, but not limited to: hot plates, ovens, heat blocks, sterilizers, water baths)
- Shutoff water valves that supply equipment (including, but not limited to: film processors, aspirators, RO/DI water systems, rotary evaporators, distillations).
- Turn off non-critical compressed gases. Remove regulators when possible and replace with cylinder caps.

General

- Coordinate any hazardous shutdown procedures to avoid personnel working alone.
- Check hazard communication door signage to ensure contact information is current.
- When performing shutdown measures, give consideration to how work will resume after the shutdown. It may be useful to refer to start up manuals to avoid future problems/confusion.
- Designate a team to handle any emergencies that require lab entry/use during shutdown. Your department may be able to assist in the coordination of backup personnel.
- Maintain communication with laboratory team during shutdown activities.
- Cancel scheduled deliveries of non-essential research materials, if possible.
- Cancel or limit new orders of hazardous and radioactive materials.
- Secure laboratory notebooks and other data.
- Lock laboratory doors. Close any windows. Turn off lights.
- Keep laboratory benches and sinks as clean and organized as possible; move hazardous materials and supplies into appropriate storage.
- Clean glassware and store appropriately, do not leave dirty equipment out. Ensure all plumbed natural gas valves are closed.
- Turn off water that supplies un-used equipment.
- Remove all perishable food from laboratory break rooms, lockers and personal spaces.

Animal Care

- Return all animals to proper housing areas to be cared for by UVA CCM staff.
- Confirm inventory of controlled substances and proper documentation. Ensure secure storage.
- If animals are housed in a PI-managed space:
 - Be sure your group has contingency plans in place for who will perform daily monitoring checks, and what to do if this person is unable to perform them regularly.

Biologicals

- Samples that can be stored at -80, -20 or 4 C should be frozen and stored as appropriate.
- Do not store packages containing dry ice in cold rooms due to risk of oxygen displacement.
- Refrigerators/Freezers/-80s
 - Check that units used to store critical samples are plugged into a red power supply for emergency power.
 - Check that they are securely closed and locked as appropriate.
- For critical cultures that must be maintained and cannot be frozen down, ensure you have enough supplies to maintain cultures, and assign essential personnel to do the work.
- Incubators
 - Consider the availability of CO₂, and plan to consolidate and shut down unneeded incubators to conserve supplies.
- Dispose of all biological materials appropriately.
 - Autoclave materials or place into Contaminated Material Containers (CMC) and prepare for pick-up
 - Ensure proper disposal of sharps and contact EHS if pickup is needed.
 - Disinfect and empty aspirator collection flasks.
- Ensure the cryostorage units have enough liquid nitrogen. Do not fill alone.
- Disinfect interior surfaces of biological safety cabinets, turn off and close sash if possible. BSCs equipped with UV light should not be left on.
- Conduct disinfection of laboratory benches, equipment and other surfaces as would normally be conducted at the end of the day.

Chemicals

- Be diligent in returning chemicals to their proper storage location; preferably shelves and appropriate cabinets to keep laboratory benches clear. Refer to chemical EHS [chemical storage guidance](#).
- Ensure separation of non-compatibles (e.g. oxidizers and flammable gases, acids and bases or flammables)
- Make sure flammable cabinets are closed and securely latched.
- Ensure that every chemical container is labeled and securely capped.
- Ensure all hazardous waste is properly labeled and lids are fully closed.
- Request waste pickup from EHS, if needed, particularly for peroxide forming compounds or other chemicals that may become unstable ([click to submit an online pickup request](#)).
- Close sashes on chemical fume hoods. Organize hood contents and consider possibility of ventilation failure in case of a power outage.
- Consider draining chemical baths or tanks into waste containers, such as isopropyl alcohol baths.
- Ensure all compressed gas cylinders are chained/secured, remove regulators (if this can be done safely), and replace with valve caps.

Radioactive Materials

- Close and secure (refrigerator with lock or lockbox) any radioactive vials in the lab. Turn off your Geiger counter, so that batteries do not run down. Remove batteries if the Geiger counter is inactive for your CRA.
- Dispose of radiation waste appropriately. Label with isotope, amount and date for items undergoing decay.

Equipment

- Electrical equipment
 - Review proper shut down procedures to prevent surges.
 - Check that essential equipment is on red power supply for emergency power.
 - Do not daisy chain or use extension cords in attempts to reach emergency power. Contact EHS for guidance.
- Lasers
 - Turn off all lasers and remove the key from the power source. Secure the key in a locked location, i.e. lockbox, locked drawer, with key access limited to the PI -designated laser safety contact(s) for the lab.
 - Turn off 'Laser In-use' or equivalent signage/light.
- NMR/other superconducting devices; MRI/other magnets requiring cryogen
 - Contact cryogen suppliers to make any special delivery arrangements/changes necessary.
 - If it is necessary to perform cryogen fills during a shutdown, do not perform these alone. A reduction in building traffic means a reduction of odds of assistance in an emergency.
- Shut down automated equipment, such as HPLC according to manufacturer's instructions.
- Shutdown and unplug heat sources (includes, but not limited: hot plates, ovens, heat blocks, sterilizers, water baths)
- Shutoff water valves that supply equipment (includes, but not limited to: film processors, aspirators, RO/DI water systems, rotary evaporators, distillations).
- Other equipment to assess for issues regarding turning off power, providing needed maintenance/supplies, or determining additional specific needs:
 - Gas Chromatography/MassSpec equipment
 - PET scanners
 - Electron microscopes, confocal microscopes
 - Irradiators
 - Cleanrooms
 - Glove Boxes
 - Solvent Purification Systems
- Consider covering sensitive equipment with plastic

Department & Building Manager Considerations

- Consider posting building entry doors about shut down status and contact information.
- Check with Facilities Management with any questions regarding status of emergency generators
- Autoclaves: close doors or shut down completely.
- Check laboratories for appropriate shutdown.
- Check gas valves to be sure they are closed with no leakage.
- Check that equipment is turned off.
- Shut down glass washing facilities.
- Check mechanical rooms.
- Check water distillation and ensure units are off and valves are closed.
- Check shared equipment and shared facilities (chemical storage/waste areas, gas storage areas, freezer farms, cold rooms).
- Shut off copy machines, printers, computers and other equipment as appropriate.
- Communicate with all delivery personnel and set a time for essential deliveries, if needed.