Safe Procedures for Servicing and Disposal of Laboratory Equipment

What is the problem?

1. **Lab equipment can be contaminated**
   Laboratory equipment can potentially be contaminated with biological material, chemicals or radioisotopes. The equipment must be cleaned/decontaminated to protect the worker servicing the equipment, the environment or those purchasing surplused equipment. Examples of equipment which must be decontaminated to assure the removal of hazardous materials prior to servicing or disposal include:

   - Centrifuges
   - Incubators
   - Cryostats
   - Fume Hoods
   - Ovens
   - Refrigerators
   - Freezers
   - Biological Safety Cabinets
   - Sinks
   - Tanks
   - Warm Rooms
   - Walk-in Refrigeration Units
   - Other storage cabinets, lockers, bins used to store hazardous materials

   * potential confined space
   * refer to "Safe Procedures for Fume Hood maintenance and Repair" for additional information on fumehoods.

   The exact decontamination procedure will be dependent upon equipment use.

2. **Lab equipment can contain hazardous materials**
   Some laboratory equipment can contain materials which present hazards to repair personnel and/or the environment. Examples include fluorescent light ballast which may contain PCB's or thermometers which contain mercury.

How to prevent exposure?

1. **Lab personnel responsible to decontaminate equipment**
   It is the laboratory's responsibility to assure that the equipment is cleaned and that the non-laboratory staff are informed of the potential hazards present. Environmental Health and Safety has prepared procedures for laboratory employees titled "Preparing Laboratory Equipment for Service or Disposal."

2. **Follow the Safety Hazards Review Procedures**
   During the scheduling of work, follow the procedures in Facilities Services Safety Hazard Review. Verify that laboratory personnel are familiar with their requirement to properly decontaminate their equipment and post the proper form. If they are not familiar with the decontamination requirements give them a copy of the procedures "Preparing Laboratory Equipment for Service or Disposal with the form UoW 1803, Notice of Laboratory Equipment Decontamination. (Attached)

3. **Before work begins check for the required University form**
   Make sure that the Notice of Laboratory Equipment Decontamination form, UoW 1803, is completed and attached to the equipment prior to beginning repairs or moving the equipment.

Need More Information?

- Contact Environmental Health and Safety: Evaluation of Worksites 543-7388
- Biosafety/Environmental Health 543-9510 Chemical Use/Hazard Communication 543-0467
- Radiation Safety 543-6328 Chemical Waste Disposal 685-2848

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Preparing Lab Equipment for Service or Disposal

Laboratory equipment can potentially be contaminated with biological material, chemicals or radioisotopes. The equipment must be cleaned/decontaminated to protect workers servicing the equipment, the environment or the public purchasing surplus equipment. Examples of equipment which must be decontaminated to assure the removal of hazardous materials prior to servicing or disposal include:

- Centrifuges
- Cryostats
- Freezers
- Tanks*
- Biological Safety Cabinets
- Walk-in Refrigeration Units*
- Other storage cabinets, lockers, bins used to store hazardous materials

* potential confined space

The exact decontamination procedure will be dependent upon equipment use.

The laboratory is responsible for assuring equipment is decontaminated before services or disposal.

Some laboratory equipment can contain materials which present hazards to repair personnel and/or the environment. Examples include fluorescent light ballast which may contain PCB’s or thermometers which contain mercury. These items may have to be disposed of as chemical waste.

It is the laboratory’s responsibility to assure that the equipment is cleaned and that the non-laboratory staff are informed of the potential hazards present. UoW Form 1803, Notice of Laboratory Equipment Decontamination is to be attached to the decontaminated equipment.

Beginning September 1, 1996, Physical Plant maintenance personnel will not service laboratory equipment unless a completed Notice of Laboratory Equipment Decontamination form (UoW Form 1803) is attached to the equipment.

Always use appropriate personal protective equipment (PPE) when working in the laboratory and make sure that non-laboratory personnel use appropriate PPE when working in your laboratory. Remember to prepare a working area which is clean, free of hazards, with enough space and easy access around equipment for non-laboratory personnel who must enter the lab to work on or remove equipment. Mop the floors with detergent cleaner if workers have to crawl on the floor. Remove hazardous items stored near, on or under the equipment so workers have access.

Equipment Used to Process or Store Radioisotopes
A thorough radiation survey of all accessible surfaces must be performed with an appropriate instrument. If radioactive contamination is detected, the equipment must be cleaned with small amounts of warm detergent water to avoid splash. Blot dry with paper towels. Commercial radiation decontamination solutions containing chelating agents may be helpful. Resurvey to assure contamination has been removed to less than 100 counts per minute per 100 cm². If contamination persists or you have other questions, contact the Radiation Safety Section of EH&S at 543-6328.

Equipment Used to Process or Store Chemicals
Safely remove, drain, or discharge chemicals from the equipment. Collect the material for reuse or chemical waste pick up by EH&S. If applicable, use an inert gas or liquid to purge, rinse or flush out residue chemical. Check with the Chemical Waste Section of EH&S at 685-2849 regarding appropriate disposal of rinsate. Rinsates such as those containing alcohol or
other solvents, those used to clean a "p listed" chemical usually require disposal as a chemical waste. Refer to the Chemical Waste Section of the Laboratory Safety Manual for a list of "p listed" chemicals.

Refrigerators, ovens and other storage equipment with non-permeable surfaces can be decontaminated by scrubbing with warm soapy water. If you have questions, contact the Chemical Safety Section of EH&S at 543-0467 for more specific information.

Fume Hood. When maintenance personnel must enter the inside of a fume hood the user must remove all containers and thoroughly wash the interior surfaces with warm, soapy water.

Equipment Used to Process or Store Biological Material
Remove biological material from the equipment. Clean the equipment with warm, soapy water and scrub as necessary. Sanitize with a 1:10 bleach solution. After 10 minutes contact time, rinse metal surfaces as bleach is corrosive.

Contact Biosafety/Environmental Health Section of EH&S to decontaminate biological safety cabinets.

If you have questions, contact the Biosafety/Environmental Health Section of EH&S at 543-9510.

Miscellaneous Laboratory Equipment
- Contact the EH&S Radiation Safety Section prior to servicing or removing equipment containing sealed radiation sources (gas chromatographs, liquid scintillation counters, etc.), x-ray equipment, lasers, or equipment producing non-ionizing radiation (UV radiation).
- Contact the EH&S Chemical Waste Section prior to servicing or removing equipment/instruments containing mercury (thermometers, baumanometer [blood pressure devices], hygrometers, etc.), gas cylinders, or pressurized containers and vessels.
- Contact the EH&S Biosafety/Environmental Health Section prior to servicing or removing equipment containing capacitors, transformers containing PCB’s, or fluorescent light ballasts.
- Contact the EH&S Occupational Health and Safety Section prior to servicing or removing equipment containing asbestos. Fume hood liners, ovens and older counter tops could contain asbestos.
- Contact the EH&S Occupational Health and Safety Section prior to sanitizing large tanks, walk-in refrigeration/freezer units or warm rooms which have failed, as these units can potentially be confined spaces.

UoW Form 1803, Notice of Laboratory Equipment Decontamination
Clean and decontaminate the equipment as recommended. Attach the Notice of Laboratory Equipment Decontamination (copy attached) to the equipment which will be serviced or surplused.

Resources - For more information contact Environmental Health and Safety at the numbers listed below. UoW Form 1803 is available from the Physical Plant order desk, from EH&S, and will be included in Appendix E, Forms & Checklists in the upcoming revision of the Laboratory Safety Manual.