Fume Hood Maintenance Procedure

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A. Fume Hood Inventory

III. Risk Identification

The campus buildings that house fume hoods and are involved in potential risks are Ross Hall, Crabbe Hall, and Arts Annex. Faculty, staff, and students who interact within these buildings could potentially be exposed to the following risks if proper usage and maintenance are not followed:

- Inhalation of toxic chemical vapors
- Exposure to unknown chemical, biological, or radioactive substances
- Contact between skin or clothing and dangerous substances

Laboratory Coordinator

- Ensure that the lab work conducted in the lab fume hood is appropriate for the type of hood and the quality of ventilation present
- Perform routine inspections of the fume hood when applicable
- Report questionable operation of a lab fume hood to the Facilities Management Service Center
- Post fume hood safety procedures on all fume hoods
- Ensure that hoods are not being used for chemical storage

Laboratory Hood Users

- Follow proper procedures when using the lab fume hoods
- Report questionable operation of a lab fume hood to the laboratory coordinator

V. Maintenance

Pre-Maintenance

When performing fume hood maintenance, proper pre-maintenance procedures shall be taken. When coordinating a shutdown of the system, the laboratory coordinators must receive notification prior to the beginning of maintenance. The lab coordinator shall carefully close, remove, identify and seal products before the fume hood can receive maintenance.

Within the exhaust system, it shall be verified that the hazardous materials have been secured and that the area surrounding the system is cleared.

It is not necessary to shut down the exhaust system when replacing lamps, cleaning behind the fume hood baffles, or replacing the airflow sensors.

Types of Fume Hoods on Campus

There are four different types of fume hoods that are used at the University:

- Chemical Fume Hoods (CFH)
- Biological Safety Cabinets (BSC)
- Laminar Fume Hoods (LFH)
- Radioisotope Hoods (RIH)

For each hood type there are specific guidelines on proper procedures and personal protective equipment (PPE). The following sections outline the maintenance procedures.

<u>Chemical Fume Hood (CFH)</u>

Maintenance that is being performed shall be conducted in pairs. Ensure that the immediate surrounding areas are hazard-free. If there are hazardous materials or lab equipment in the area, contact the laboratory coordinator to have the area fully cleared for maintenance. Do not remove the equipment unless told to do so. Assume the duct lining, fume hood lining and all internal

exhaust components are potentially contaminated with chemical residue. Ask the lab coordinator if heated Perchloric acid or Hydrofluoric acid was ever used in the hood. If so, contact EHS.

The following is possible personal protective equipment (PPE) needed when conducting maintenance on a CFH:

- Half face air purifying mask shall be worn
- Nitrile gloves, splash proof goggles, and coveralls shall be worn
- Individual workers must maintain their PPE according to manufacture specifications and training provided
- After maintenance work is completed, coveralls shall be placed in a bag and given to the EHS for proper disposal. The gloves and respirator must be washed in warm soapy water. (When removing PPE, it is important to remove mask then wash hands and face thoroughly).

Biological Safety Cabinets (BSC)

When servicing building Heating, Ventilating, and Air Conditioning (HVAC) equipment serving a biological safety cabinet, follow the guidelines for chemical fume hoods in the previous section. Particulate contaminants originating inside the cabinet are filtered out by BSC filters system before reaching the building HVAC system. Contact EHS before beginning work inside contaminated spaces of the BSC such as the plenum, blower, or HEPA filter compartment.

Follow the chemical fume hood PPE guidelines for BSC maintenance.

Replacement/ Repair of HEPA or Charcoal Filters

1. Turn off the fume hood fan after notifying the lab coordinator
2. Remove the filter access panel and place in a large poly bag
3. Attach the large bag around filter access panel opening in a manner that seals the filter access opening using duct tape
4. Remove pre-filter by grasping the filter from the outside of the bag and pull into the bag
5. Pull HEPA filter into the bag in the same manner
6. Remove bag from ductwork, then seal the bag shut with duct tape
7. Replace access panel and install new filter and pre-filters
8. Start fume hood fan and then reassemble
9. Any tools that had contact with the interior of the fume hood should be washed with warm soapy water
10. Clean up dust and debris outside of the fume hood with wet paper towels and place in the bag
11. Remove PPE and place in the bag. Be sure to wash hands and face thoroughly
12. Take removed filters to dumpster if the item was cleared for disposal. If it’s not cleared, contact EHS
13. When completed, schedule an airflow certification to ensure the system is running at proper regulatory standards

Laminar Fume Hoods (LFH)

Laminar Fume Hoods can be treated the same way as biological safety cabinets and follows the same PPE guidelines as CFH and BSC.

Appendix A