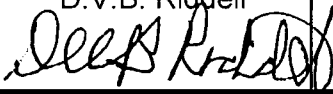


**The UNIVERSITY of WESTERN ONTARIO**  
**Physical Plant and Capital Planning Services Division**

<b>POLICY:</b>			<b>NUMBER:</b> WP-51
<b>HANDLING OF FUMEHOODS AND DUCT WORK IN RESEARCH LABORATORIES</b>			Page 1 of 2
<b>PREPARED BY:</b>  PP&CPSD	<b>AUTHORIZED BY:</b>  D.V.B. Riddell 	<b>CLASSIFICATION:</b>  Work Procedure	<b>EFFECTIVE:</b> April 5, 2006
			<b>SUPERSEDES:</b> New

**APPLICATION:**

This procedure outlines the minimum recommended requirements to follow in handling fume cabinets and associated duct work at UWO Research Laboratories.

**BACKGROUND:**

Research Laboratories utilize a wide variety of biological, chemical, and radioactive substances. Work with hazardous materials is usually performed in a specially designated area in the laboratory or the fume cabinet.

Biological agents are handled in Biological Safety Cabinets which are designed to prevent biological materials from escaping from the cabinets. Hazardous biological agents are trapped in the High Efficiency Particulate Air Filter (HEPA) located at the top of the cabinets. Therefore, when one of these cabinets require maintenance, the research group must make the cabinet safe by means of disinfecting all parts of the cabinet to ensure that all hazardous biological agents have been effectively destroyed.

Volatile radioactive materials must be handled in designated fume cabinets. At regular intervals, the research group must perform wipe tests in areas where radioactive materials are used to determine if there is any contamination; if found, they must decontaminate and eliminate all sources of contamination. Prior to any maintenance activity, wipe tests must also be performed to ensure that maintenance staff will not be exposed to any action levels of radioactive materials.

This procedure focuses on the use of chemicals in fume cabinets. Most chemical fume cabinets are used for preparation of chemical reagents, or in some cases to carry out an experimental procedure such as digestion and distillation. Irresponsible use of fume cabinets may render them unsafe due to contamination or the development of unstable residue on walls in areas of restricted flow such as bends in the ductwork.

**PROCEDURE**

When maintenance work is to be performed in any chemical fume cabinet, the following steps must be followed:

1. PP&CPSD supervisor must determine if the laboratory has been decommissioned by OHS. If decommissioning is not required, then OHS must be contacted by the PP&CPSD supervisor to evaluate any potential hazards. Method of disposal of fume cabinets shall be determined by OHS.

**POLICY:**

**HANDLING OF FUMEHOODS AND DUCT WORK IN RESEARCH LABORATORIES**

**NUMBER:**

WP-51

Page 2 of 2

**Note:** In laboratories where aggressive perchloric acid digestion procedures were used, the perchloric acid fume cabinets must incorporate a wash down system in the duct work to prevent the build-up of perchloric acid salts.

**Because of additional risks, this procedure is not adequate and does not apply to fume cabinets where perchloric acid was used or stored.**

**Note:** Acid digestion fume cabinets must have duct work specially designed to resist acid corrosion.

2. All hazardous materials must be removed by the research group prior to any work. This includes the removal of hazardous materials from the fume cabinet and associated storage compartments.
3. Isolate work area; follow PP&CPSD Work Procedure WP-41.
4. Visually inspect the fume cabinet and duct work for any salt accumulation, signs of corrosion, or discolouration. Large quantities of household dust tends to accumulate in the internal parts of the fume cabinet; check for asbestos content if the area contains asbestos fireproofing insulation.
5. Vacuum the accumulated dust with HEPA vacuum whether the dust contains asbestos or not. Wear P100 HEPA half face respirator.
6. Consult with Occupational Health and Safety if necessary.

**PERSONAL PROTECTIVE EQUIPMENT:**

Since no absolute guarantee of cleanliness of cabinets is possible, the following Personal Protective Equipment (PPE) are required (as appropriate) for maintenance, removal, or relocation of fume cabinets.

- Nitrite gloves
- Safety glasses; goggles are preferred for overhead work
- Protective coveralls, i.e., Tyvek suit
- N95 mask (HEPA half face respirator for vacuuming dust and asbestos)

Upon completion, wash hands and face with soap and water.