

**ADVISORY NO. 14.1: BASIC PROCEDURES FOR INSTALLATIONS OF FANS/FILTERS ON CHEMICAL FUME HOODS WHICH ARE ALSO UTILIZED FOR WORK INVOLVING RADIOACTIVE MATERIAL (RAM)**

**PROCEDURES AND PRECAUTIONS:**

**Protective Clothing:**

Protective clothing will be required throughout the entire installation operation in order to avoid any personnel contamination from either radioactive material or hazardous chemicals, which may be present in the lab.

At a minimum, all personnel involved in the project will be required to wear disposable protective clothing including coveralls, shoe covers (booties), eye protection (goggles), and head gear (surgeon's cap or nurse's bonnet).

Any worker whose job demands that he/she enters the labs or must handle objects that are known to be or suspected of being contaminated by radioactive materials or who must work in close proximity to dangerous chemicals or agents, must don full protective clothing.

**Respirator Protection:**

Respirators will be required for any work done in an atmosphere where the potential for any dusts, fumes, mists, vapors or particulates might emerge. (Refer to Advisory 11.1)

Any worker performing any task(s) in an atmosphere described above will be required to wear a respirator.

Fans will have to be shut off in order to prevent disturbance of any potential contaminants.

Workers will also be more able to hear and communicate with one another with less noise present.

All immediate work areas and adjacent areas will be protected. This will be done by either lab personnel, RSO personnel, Environmental Health & Safety personnel or a combination thereof.

Basically all procedures and precautions outlined above will remain in effect for installations of fans/filters on chemical fume hoods which are also utilized for work involving radioactive material (RAM).

**Radiation Body Counts:**

It is recommended that all workers be counted for internal uptake of radionuclides in order to:

- possibly put workers' minds at ease in the event that the results are negative,
- be advised by a qualified physician as to what steps can be taken in case some uptake is noticed, and
- determine the effectiveness of the personnel protection program. The Radiation Safety Office, however, should decide who does or does not need to have a whole body count.

**Disposal of Contaminated Ductwork:**

The ductwork itself is not "radioactive"; it may or may not be "contaminated" by radioactive materials. Through appropriate sampling and analysis techniques RSO personnel will be able to verify one or the other. If no contamination is found, the debris may be disposed of via the normal trash. If, however, contamination is present there are several options for disposal:

Option A:

contaminated items may first be decontaminated prior to disposal in normal trash [for obvious

reasons this is the least attractive option];

Option B:

if the nature of the radioisotopic contaminants are such that they are relatively short-lived, i.e. their half-lives are less than or equal to 65 days, then the debris can be held for radioactive decay to background levels and then discarded normally after appropriate monitoring, and;

Option C:

the debris can be properly packaged as contaminated waste for disposal at one of the existing radwaste burial facilities. This must be done in conjunction with the Radiation Safety Office.

If Option C, becomes the intended route of disposal, Radiation Safety will supply the drums and associated supplies, give instruction and assistance on proper packaging and sealing, perform the labeling, monitoring, wipe testing, weighing, manifest logging and ultimate shipment of the drum(s).

**Contractors Protection for Tools and Equipment:**

There are ways to protect the contractor's tools, the most effective being to wrap them in a heavy gauge plastic and secure with tape or, even better, to simply apply duct tape to the tools. Either method may however, make the tool somewhat difficult to handle or operate. It may also render the tool incapable of easily or successfully doing that which it is intended to do. Tools, however, can be decontaminated. Radiation Safety will provide guidance and assistance in accomplishing this if it becomes necessary.

**Monitoring of Project:**

The Radiation Safety Office will provide all workers involved in this project with temporary dosimetry (personnel monitoring devices). These devices will be in the form of either "whole body" or "film" badges, typically worn at the waist, or TLD (thermoluminescent dosimeter) rings to monitor hand exposure, or DRD's (direct reading dosimeters) or a combination thereof. Radiation Safety personnel will instruct workers as to what part of the anatomy the badge should be worn, collect all badges upon completion of the work and have them processed for results. The badges themselves afford no "protection" against radiation emissions; they simply tell how much radiation an individual has been "exposed" to. A radiological assessment of the work areas via portable area monitors may also be made which, if feasible, would limit the amount of time the worker could spend in a particular area.