

ADVANCED MEDICAL SYSTEMS OPERATING PROCEDURE

EXHAUST FILTER CHANGE IN THE CELL MACHINERY ROOM

ISP-12 Rev. 01/95

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1.0 PURPOSE: To provide a detailed description of a routine maintenance task that must be performed in a High Radiation Area. To insure that proper protective measures are taken.

2.0 PRECAUTIONS AND LIMITATIONS:

2.1 This procedure is to be followed each time the filters are changed.

2.2 The Cell Machinery Room is a Restricted Area of relatively high activity. Changing filters may create high levels of airborne contamination.

2.3 This procedure requires a minimum of two (2) individuals.

- a. One to enter the Cell Machinery Room.
- b. One who remains outside and acts as an assistant.

2.4 A breathing zone air sample shall be taken during the entire working period.

2.5 Film badges, dosimeters and survey meter must be sealed in plastic bags to prevent contamination.

2.6 A specific RWP is required for this job.

2.7 The RSO or designee shall monitor this entire operation.

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3.0 INSTRUCTIONS:

- 3.1 Ensure all isotopes in the Hot Cell are removed or placed in the shielded floor containers.
- 3.2 Tape plastic or wrapping paper over the landings and steps immediately outside the Cell Machinery Room.
- 3.3 All doors in the area shall be kept closed at all times except for necessary passage of personnel or equipment and supplies.
- 3.4 Enter the room and evaluate the radiation level using a calibrated high range detector. A pre-entry air sample is not required for this particular job. The individual acting as the assistant also monitors the time.
- 3.5 Notify ADT that the fans will be shut down.
- 3.6 Begin the breathing zone air sample.
- 3.7 Re-enter the room and commence work.
- 3.8 With the fans running, the exposed ductwork on the intake side of the filters should be tapped to loosen dust particles. The fans will draw the particles into the filters.
- 3.9 Shut down the Hot Cell fans.
- 3.10 Filter removal.
 - 3.10.1 Remove the bolts from the side to the Hot Cell HEPA shroud. Take care not to drop the shroud cover.
 - 3.10.2 Carefully remove the prefilter on the right side of HEPA by sliding it toward you.
 - 3.10.3 Place the prefilter in a plastic bag.
 - 3.10.4 Remove the top and bottom latches for the HEPA filter.
 - 3.10.5 Draw the filter out, placing the pre-cut cardboard cover on the intake side.
 - 3.10.6 Place the filter into a plastic bag held by the assistant at the doorway. Take care not to contaminate the outside of the bag by allowing it to be touched by either the filter or the individual inside the room.

- 3.10.7 Seal the bag and place it in a special radioactive filter box.
- 3.10.8 The assistant now seals the box and sets it on a piece of paper as far away as possible.
- 3.11 Record personal dosimeter readings and resurvey the area. The RSO will review these readings and authorize further work.
- 3.12 Filter installation.
 - 3.12.1 The new filter is passed into the room and installed, paying close attention to the proper direction of airflow.
 - 3.12.2 Install a new prefilter.
 - 3.12.3 Bolt the filter into place, grease the fan motor and examine the belts for proper tension and wear. Replace the belts, if necessary.
 - 3.12.4 Place the fan back into operation. Verify that it is operating properly. Check the pressure differential and record the reading.
- 3.13 Shut down the Lab exhaust fan.
- 3.14 Repeat steps 3.10, 3.11 and 3.12.

NOTE: The filters for this fan are a bank of four (4) in a 2 X 2 array, mounted on a cart which rolls out from the shrouds. When the new filters are installed, it is necessary to tape the joints between filters to prevent leakage.
- 3.15 Stop the breathing zone air sample, remove the filter paper and package for evaluation.
- 3.16 Job completion.
 - 3.16.1 Remove trash and tools from the area.
 - 3.16.2 Remove protective clothing and place it in the waste receptacle inside the HEPA Room. Step out of the area and shut the door.
 - 3.16.3 Place respirator in a separate bag and seal the bag.

- 3.16.4 Place the shoes in a third plastic bag and seal the bag.
- 3.16.5 Put on clean coveralls.
- 3.16.6 Carefully remove the taped down paper or plastic and seal it inside a plastic bag.
- 3.16.7 Place all waste bags inside waste disposal cartons and seal the cartons.
- 3.16.8 Perform a whole body frisk before leaving the area.
- 3.16.9 Proceed to the Locker Room for removal of coveralls, another whole body frisk and donning of street clothes.
- 3.16.10 Notify ADT that the fans are again operational.
- 3.16.11 Perform a contamination survey of the steps to the Cell Machinery Room, the floor of the outer area and in any other area where personnel involved in this operation may have walked.