

Memorandum

05MAY2008

To: MiniBooNE Radiation Safety File
From: Roger Zimmermann
Subject: Reversal Of Horn Power Supply Polarity

Operation of the MiniBooNE beamline requires alternating periods of operation with neutrinos and anti-neutrinos interacting with the experiment's detector. In order to reconfigure the experiment to transport the two neutrino polarities, the polarity of the horn power supply must be reversed.

The polarity reversal requires four to five Technicians working in the MI-12 service building for a period of approximately three shifts. Much of the work is done inside the cabinets that make up the horn power supply.

Since operational experience has shown that low levels of Be⁷ is present both in the service building and inside the power supply cabinets, care must be taken to limit the potential uptake by the workers.

This memo outlines the procedures I have put in place to ensure that the potential uptake is minimized.

Procedure

- 1. Obtain floor wipes from the area around the power supply cabinet.**

The wipe results can be compared to previous results. If the levels are higher than previous samples the wipes will serve as an alert that increased precautions may need to be taken.
- 2. Arrange for Personal Air Monitors (PAMS) to be available for the workers. At the same time arrange for worker training on the use of the PAMS.**

The PAMS will provide a record of any potential uptake by the workers.
- 3. Find out the names of the individuals who will be performing the polarity change.**

The workers will need to have current Radiological Worker training for this job. The current training status of the workers should be verified.
- 4. Decontaminate the interior of the power supply cabinets and take post decon wipes of the areas where the work will take place.**

Decontaminating the interior of the supplies will minimize potential contamination issues. Wipe results will serve as a record of the levels the workers encounter. I recommend that at least one wipe be taken inside each cabinet and that representative sample results be reviewed prior to allowing the work inside the cabinets to begin.

- 5. Install a new filter in the AMS-3 air monitor in the service building. The new filter should be removed and submitted for counting at the completion of the polarity change.**

The activity measured while the polarity reversal is ongoing will serve as an additional data point regarding air borne activity in the service building. The results can also be used for comparison purposes with the activity measured by the PAMs.

- 6. When the work has been completed, submit the PAM cartridges and the AMS-3 filter for analysis.**
- 7. When the analysis results have been obtained, calculate the percentage of Derived Air Concentration and document the results.**