

Battelle
The Business of Innovation

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May 16, 2005

Director of Nuclear Material Safety and Safeguards
Attention: GLTS
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Source Leak Test Failure Notification Report

Battelle Memorial Institute (Battelle) in Crystal City, Virginia, has identified a source that exceeded 0.005 uCi of loose contamination on a leak test. Battelle is notifying the Nuclear Regulatory Commission (NRC) of the leak test results as required by 10 CFR 31.5.

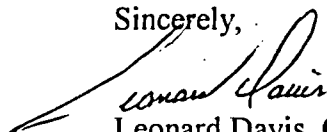
The Crystal City office has two Smiths Detection Centurion Ion Mobility Spectrometer (IMS) units installed in cabinets at two separate locations. Both IMS unit draw air from a remote location and the air is exhausted into the interior of the cabinets. Each Centurion IMS is a generally licensed device containing a 15 milliCurie Nickel-63 sealed source and the Registry of Radioactive Sealed Sources and Devices registration number is NR-0163-D-101-G.

On April 25, 2005 a leak test was performed on both Centurion IMS units and the analysis of the leak test was performed the following day. The analysis indicated the leak test results for the Centurion IMS unit serial number 22318 was 0.26 uCi. Operation of the device was immediately suspended and access was restricted to the cabinet the IMS unit is installed in. A follow-up contamination survey was conducted that day of the IMS unit and the cabinet. The survey indicated loose surface contamination of 32,000 dpm/100 cm² on the housing of the IMS unit and up to 2.40E+06 dpm/100cm² on the cabinet shelf where the air is exhausted.

On April 28, 2005, a member of Battelle's Radiation Safety staff, in Columbus, Ohio, was sent to Crystal City to survey adjacent areas, decontaminate the cabinet, and prepare IMS unit 22318 for return to the manufacturer. A survey of the room where the cabinet is stored and the adjacent areas indicated no removable activity greater than 200 dpm/100 cm² and that total activity was less than 3,000 dpm/100 cm². Total activity levels were measured using an Eberline Model ESP-2 with a 180 cm² gas proportional detector calibrated to Nickel-63. The cabinet and the detector housing were decontaminated and subsequent surveys indicated that there was no removable activity greater than 200 dpm/100 cm² and total activity was less than 3,000 dpm/100 cm².

Battelle returned Centurion IMS unit serial number 22318 to Smiths Detection Warren on April 29, 2005, without replacement. If you have any questions or need further information, please do not hesitate to contact me at (614) 424-4368.

Sincerely,



Leonard Davis, CHP
Radiation Safety Officer

U-175510