

Low-Level Plutonium Sample Involved in NIST-Boulder Lab Incident

June 11 2008

On Monday afternoon, June 9, researchers in a laboratory room at the Commerce Department's National Institute of Standards and Technology (NIST) campus in Boulder, Colorado discovered that a vial holding about 1/4 of a gram of a plutonium-containing powder had cracked and that some particles had spilled from the vial. The laboratory room and an adjacent lab in NIST's Building 1 were immediately sealed off.

Twenty-two NIST staff and associates who had been working in or near the lab were asked to remain in the immediate area until they could be carefully monitored and any radioactive materials on their clothing or bodies removed.

Trace contamination was found on the soles of the shoes or on a few articles of clothing for most of the 22 personnel. In most cases, the trace contamination was easily removed using soapy water following standard health physics practices, and 20 personnel were sent home contaminant-free. Two staff members who had worked directly with the material had trace contamination on their hands and began the standard health physics practice of carefully washing their hands to remove the contamination.

NIST health safety personnel supervised the careful testing of nearby hallways and adjacent labs and offices. Some areas of trace contamination were found in the nearby hallways and in a small office area at the end of a hallway. These areas were cleaned and retested to ensure they were contamination free. There was no evidence of any contamination outside of the immediate area or in the doorways leading

out of the building.

The affected laboratory room and the adjacent connecting laboratory room were sealed off for further testing, along with the nearby men's room. These areas will be fully assessed and cleaned as required. Air sampling in the affected laboratory room shows no evidence of airborne plutonium particles. There is no evidence that any radioactive materials left the affected laboratory, apart from the trace contaminants in nearby areas and on the affected personnel, and all those traces have been thoroughly cleaned and the areas retested, showing no radiation above normal background levels.

Plutonium is a radiation-emitting element, and the research sample involved is a certified reference material with very precisely known radiation activity levels. The affected NIST employees and associates are being carefully monitored to quantify any potential individual exposure from the plutonium. Based on continuing test results, appropriate actions will be taken if necessary.

The small plutonium sample (smaller than a dime in size) was being used in a research project to develop improved radiation detectors for use by nuclear inspectors outside NIST. The Nuclear Regulatory Commission has been advised about the incident. NIST is conducting a thorough investigation to gather facts about how the incident occurred and to determine what, if anything, may be done to prevent any similar situations in the future.

Source: NIST

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