



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL RISK MANAGEMENT RESEARCH LABORATORY
CINCINNATI, OH 45268

OFFICE OF
RESEARCH AND DEVELOPMENT

August 29, 2007

Administrator
United States Nuclear Regulatory Commission
Region III
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

RE: Materials License 34-12736-02, Event Notification

Dear Sir/Madam:

On July 30, 2007, 4:25 p.m. EDT we reported a missing sealed source by telephone to Mr. John MacKinnon at the NRC Operations Center. This letter is the written follow-up to that telephone report.

Description of missing material:

We are reporting the loss of an electron capture detector (ECD) containing 15 mCi of ⁶³Ni. It was a Hewlett Packard ECD, Serial Number L6578. The ECD was originally installed in a Hewlett-Packard gas chromatograph, Model 5890. It is a plated foil source contained within a metal housing.

Circumstances under which the loss occurred:

The missing ECD was determined to be defective and was designated to be returned to the manufacturer for refurbishing. The ECD was never sent for refurbishing & remained in the gas chromatograph until June 2003 and was leak tested in the GC. After the June 2003 leak test the GC was placed on a cart in adjacent lab 513 and the ECD was removed from the GC and stored on a shelf in lab 514 and has been leak tested every six months through the December 2006 leak test with no evidence of leakage. During the most recent routine sealed source inventory and leak test campaign, the health physicist was unable to locate the ECD.

Probable disposition of the missing material:

It is possible that the missing ECD was transferred, without authorization from the RSO to another location within the 200 laboratory Cincinnati-AWBERC facility and that it may be discovered at some time in the future. A quite exhaustive search of all of our facilities was conducted including an outlying warehouse and we have to conclude that the missing ECD may have been inadvertently thrown out in the regular trash.

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Potential exposures of individuals to radiation;

The ⁶³Ni contained in this missing ECD is a very weak (66keV maximum energy) pure beta emitting radionuclide that is securely contained within a metal housing. Potential External radiation exposure from this source is negligible. The source was not leaking at the time of its most recent leak test in December 2006. The potential internal dose from a leaking source such as this to laboratory workers or any members of the public is minimal. An analysis of potential radiological impacts from an uncontrolled ECD such as this has been performed and is published in NUREG-1717, "Systematic Radiological Assessment of Exemptions for Source and Byproduct Materials."

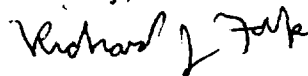
Actions taken to recover the material:

Due to the uncertainty of the precise timeframe of its loss, the minimal potential risk to any persons from this source and the unlikelihood that it can be realistically be retrieved, it is impractical to attempt to recover the lost ECD from a landfill. No such actions are being contemplated.

Actions taken to prevent recurrence:

1. Each of the twenty one of our gas chromatographs [GC's] has been assigned to a Federal supervisor as the custodian for that GC containing an ECD. **attachment**
2. All ECD's not installed in an instrument have been confiscated by the RSO and placed in locked storage
3. Each GC has been labeled on the exterior that it is not be moved without the express permission of the RSO.
4. Each ECD has been labeled that it is not to be moved from one GC to another GC or out of the laboratory without the express permission of the RSO.
5. Each laboratory worker, federal and contractor, employee will be re-trained with emphasis on the necessity of maintaining the security of sealed and unsealed sources.
6. Each laboratory containing a GC will be equipped with an electronic keypad so that every time someone enters a laboratory their entry will be recorded.

Sincerely,



Richard J. Falk
Radiation Safety Officer
513.569.7695 FAX 513.569.7585

GC # _____

[Federal Supervisor] **

GAS CHROMATOGRAPH Custodian _____
Printed _____ Signed _____

** I will notify the RSO before GC or ECD is moved from listed location

Make _____

Serial Number _____

EPA Decal Number _____

Put in service date _____

Location _____

DETECTORS originally installed in GC

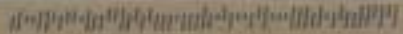
FID Serial number _____

ECD Make _____ Serial Number _____

Activity _____ mCi ⁶³Ni

ECD Make _____ Serial Number _____

Activity _____ mCi ⁶³Ni



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