



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE  
WASHINGTON DC

EN-51783

21 March 2016

MEMORANDUM FOR Administrator, NRC Region IV  
ATTN: Mr. Dapas

FROM: AFMSA/SG3PB

SUBJECT: Report, Loss of Radioactive Material –Am-241 Check Source

I AW 10 CFR 20.2201(b), we are providing a written report for the loss of radioactive material at Wright-Patterson Air Force Base OH. The loss of material was reported on 9 March 2016 telephonically to NRC Operations Center, Event No. 51783 and via E-mail to NRC, Region IV (Ms. Simmons). The following information addresses the reporting requirements:

a. **Description of the licensed material:** Isotope Product Laboratory, 12.8 nCi Am-241 Check source, RP# 0895.

b. **Description of circumstances for loss:** One (1) each Isotope Product Laboratory, 12.8nCi Am-241 check source, RP# 0895 was to be shipped, along with RP# 4134 (mixed gamma standard) and RP# 4099 (mixed gamma standard), to Nellis AFB in support of USAFSAM/OEC personnel from Wright-Patterson Air Force Base. Permit Radiation Safety officer (PRSO), Mr. Kyle Harness, could not immediately locate RP# 0895. The PRSO checked the Radio Active Materiel (RAM) sign-out log to determine if the source had been signed out to other OE personnel. The log did not show evidence of the source having been signed out. The PRSO questioned Radioanalytical Lab, Dosimetry Lab, Calibration Lab, Air Force Radiation Assessment Team (AFRAT), Consulting and Education personnel to determine if anyone was using the source. All of them had a negative reply. All laboratories were thoroughly searched as were the OEC equipment cases used in the Nellis AFB operations. AFRAT equipment cases in War Reserve Materials (WRM) were also searched. The source was not located. The PRSO determined the source had last been accounted for during the RAM inventory dated 17 August 2015. Additional investigation revealed that the prior PRSO had been requested to send the source, along with two other sources, to Nellis AFB in support of OEC personnel in September 2015. These sources were never signed out of the inventory when sent to Nellis AFB. Additionally, no OEC personnel recall using the source during that period. The other two sources requested were received back at USAFSAM on 5 October 2015. DOE personnel working with OEC personnel at Nellis AFB, as well as the Nellis Installation Radiation Safety Officer (IRSO), were contacted to see if they had the source in their possession. All had a negative reply. It cannot be determined if the source was lost at USAFSAM or Nellis AFB. PRSO contacted Mr. Mark Mays, IRSO, at 1531, 17 February 2016 to inform him of the potential lost source.

c. **Statement of disposition:** After searching for the check source at all possible locations and not being located, the current disposition of the Am-241 check source is still unknown.

d. **Exposures to individuals:** Based on radiological monitoring of similar sources/devices, the estimated level of radiation exposure would be negligible which also agrees with the conclusions of the NUREG/CR-1156 (Nov 1979).

e. **Actions taken:**

(1) Ensure users follow the procedure for checking out sources.

(2) Requests for the use of OE sources will be sent to the PRSO in writing by the TDY team lead.

(3) PRSO will audit the source checkout log to verify accountability of sources.

(4) All source shipments will be accompanied by a manifest/inventory regardless of the regulatory requirement.

f. **Procedures/measures to rectify future loss:**

(1) A detailed training session will be given on accountability and methods. The Permittee and the PRSO will enforce procedure for checking out sources.

(2) TDY personnel taking OE sources will be held responsible for source accountability until the sources is shipped back to WPAFB. The TDY team lead will be responsible for ensuring that all sources sent on the TDY are sent back to WPAFB.

(3) Locks on all source lockers will be changed out and only the PRSO and the APRSO will have keys. Only the PRSO and APRSO will access the source lockers.

If you have any questions, please contact me at 703-681-6871 or E-Mail at ramachandra.k.bhat.civ@mail.mil.

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Ramachandra K. Bhat, Ph.D., CHP  
Senior Health Physicist  
USAF Radioisotope Committee Secretariat  
AF Medical Support Agency Office of the  
Surgeon General

**cc:**

**NRC Region IV (Ms. Simmons)**

**NRC Operations Center (Mr. Shoemaker)**

**88 CEG/CEI(Mr. Mays)**

**AFIA/SGO (Lt Col Abell)**

**AFMC/SGPB (Col Byer)**

**USAFSAM/OE (Col Odden)**

## Event Notification Report for March 18, 2016

Non-Agreement State	<b>Event Number: 51783</b>
Rep Org: USAF Licensee: USAF Region: 1 City: FALLS CHURCH State: VA County: License #: 42-23539-01AF Agreement: Y Docket: 030-2864 NRC Notified By: RAMACHANDRA BHAT HQ OPS Officer: JEFF HERRERA	Notification Date: 03/09/2016 Notification Time: 16:36 [ET] Event Date: 02/17/2016 Event Time: 09:00 [EST] Last Update Date: 03/09/2016
Emergency Class: NON EMERGENCY 10 CFR Section: 20.2201(a)(1)(ii) - LOST/STOLEN LNM>10X	Person (Organization): ANTHONY DIMITRIADIS (R1DO) DAVID PROULX (R4DO) KENNETH RIEMER (R3DO) NMSS_EVENTS_NOTIFIC (EMAI) CNSC (CANADA) (FAX)

This material event contains a "Less than Cat 3 " level of radioactive material.

### Event Text

#### LOST AM-241 CHECK SOURCE

"Organization Possessing Source(s): 711HPW, USAFSAM/OE.

"Specific Location(s): Wright-Patterson AFB, OH Bldg. 20840, Room W329D, OEA Radioactive Material Storage.

"What Happened: One (1) each Isotope Product Laboratory, 12.8 nCi Am-241 check source, RP# 0895 was to be shipped, along with three other sources, to Nellis AFB in support of USAFSAM/OEC personnel. The PRSO [Permit Radiation Safety Officer] could not immediately locate RP# 0895.

"The PRSO checked the RAM [Radioactive Material] sign-out log to determine if the source had been signed out to other OE personnel. The log did not show evidence of the source having been signed out. The PRSO questioned Radioanalytical Lab, Dosimetry Lab, Calibration Lab, AFRAT, Consulting and Education personnel to determine if anyone was using the source. All of them had a negative reply. All laboratories were thoroughly searched as were the OEC equipment cases used in the Nellis operations. AFRAT equipment cases in WRM were also searched. The source was not located.

"The PRSO determined the source had last been accounted for during the RAM inventory dated 17 August 2015. Additional investigation revealed that the prior PRSO had been requested to send the source, along with two other sources, to Nellis AFB in support of OEC personnel in September 2015. These sources were never signed out of the inventory when sent to Nellis AFB. Additionally, no OEC personnel recall using the source during that period. The other two sources requested were received back at USAFSAM on 5 October 2015. DOE personnel working with OEC personnel at Nellis AFB, as well as the Nellis IRSO [Installation Radiation Safety Officer], were contacted to see if they had the source in their possession. All had a negative reply. It cannot be determined if the source was lost at USAFSAM or Nellis AFB.

The PRSO contacted the IRSO, at 1531, 17 February 2016 to inform him of the potential lost source.

Event Notification Report for March 18, 2016

USAF Master Materials License: 42-23539-01AF Docket: 030-28641.  
Applicable USAF RAM Permit: OH-00563-00/14AFP Docket: 030-00563.  
Commodity (i.e., compasses, etc.): Isotope Product Laboratory check source.  
Radioisotope(s) Involved: Am-241  
Activity: 12.8 nCi  
Sealed Source Model/Serial No: K-845/0895

**THIS MATERIAL EVENT CONTAINS A "LESS THAN CAT 3" LEVEL OF RADIOACTIVE MATERIAL**

Sources that are "Less than IAEA Category 3 sources," are either sources that are very unlikely to cause permanent injury to individuals or contain a very small amount of radioactive material that would not cause any permanent injury. Some of these sources, such as moisture density gauges or thickness gauges that are Category 4, the amount of unshielded radioactive material, if not safely managed or securely protected, could possibly - although it is unlikely - temporarily injure someone who handled it or were otherwise in contact with it, or who were close to it for a period of many weeks. For additional information go to [http://www-pub.iaea.org/MTCD/publications/PDF/Pub1227\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/Pub1227_web.pdf)

**Single Event Report**

**NMED Item Number: 160118**

**Narrative:**

**Last Updated:** 03/17/2016

The Department of the Air Force (Wright-Patterson AFB) reported the loss of a 473.6 Bq (12.8 nCi) Am-241 check source (Isotope Product Laboratory model K-845, serial #0895). The loss was discovered on 2/17/2016 when the source was to be shipped to Nellis AFB in support of USAFSAM/OEC personnel. The Wright-Patterson AFB Permit RSO could not locate the source. The RSO checked the radioactive material sign-out log to determine if the source had been signed out to other OEC personnel. The log revealed no evidence of sign-out. Personnel were questioned and none had knowledge of the missing source. The source was last accounted for during an inventory on 8/17/2015. It was determined that the previous Permit RSO sent the source, with two other sources, to Nellis AFB in September 2015. However, the sources were never signed out of the inventory at that time. Additionally, no OEC personnel recall using the source during that time period. The other two sources were received back from Nellis AFB on 10/5/2015. DOE personnel working with OEC personnel at Nellis AFB, as well as the Nellis AFB Installation RSO, were contacted and did not know the location of the missing source. It cannot be determined if the source was lost from USAFSAM or Nellis AFB. INL has requested additional information for this event.

Event Date: 08/17/2015 Date Reported to Agreement State:  
 Discovery Date: 02/17/2016 Date Reported to NRC: 03/09/2016

**Licensee/Reporting Party Information:**

Regulated By: NRC Reciprocity: NONE  
 License Number: 42-23539-01AF Name: DEPARTMENT OF THE AIR FORCE  
 NRC Docket Number: 03028641 City: BOLLING AFB  
 NRC Program Code: 03614 State: DISTRICT OF COLUMBIA  
 NRC Region: 4

**Site of Event:**

Site Name: WRIGHT-PATTERSON AFB State: OHIO

**Additional Involved Party:**

License Number: NA Name: NA  
 NRC Docket Number: NA City: NA  
 NRC Program Code: NA State: NA  
 NRC Region: NA

**Other Information:**

NRC Reportable Event: Y Abnormal Occurrence: N  
 Agreement State Reportable Event: N Investigation: N  
 Atomic Energy Act Material: Y Record Complete: R  
 Consultant Hired: N Event Closed by Region/State: N

**Event Type:**

LAS - LOST/ABANDONED/STOLEN

**Event Cause:**

LAS  
 Cause: HUMAN ERROR / MANAGEMENT DEFICIENCY

**Event IAEA Aggregate Category:**

LAS

IAEA Aggregate Category: <5

**Corrective Actions Information:**

Event Type: Number: Action:

LAS 1 NOT REPORTED

**Source/Radioactive Material Information:**

LAS

Source Number: 1

Source/Material: SEALED SOURCE CALIB/MARKER Radionuclide: AM-241

Manufacturer: ISOTOPE PRODUCTS LAB Activity (Ci): 0.0000000128

Model Number: K-845 IAEA Category: <5

Serial Number: 0895

**Reporting Requirement Information:**

Event Requirement:  
Type:

LAS 20.2201(a)(1)(ii) - Lost, stolen, or missing licensed material in a quantity greater than 10 times the Appendix C quantities.

**Keywords:**

Event Type: Keyword:

LAS MATERIAL LOST AND NOT FOUND

LAS TRILATERAL TO CANADA

**Reference Documents:**

Reference Document Number: Entry Date: Retraction Date: Type of Report:

EN51783 03/17/2016 EVENT NOTIFICATION