

## RI - DNMS Licensee Event Report Disposition

Licensee: Dept of the Army - Redstone Arsenal, Alabama

Event Description: Leaking Ni-63 Source

License No: Gen Lic Docket No: \_\_\_\_\_ MLER-RI: 2005-74  
 Event Date: Oct 05 Report Date: Nov 05 HQ Ops Event #: \_\_\_\_\_

**1. REPORTING REQUIREMENT**

<input type="checkbox"/> 10 CFR 20.1906 Package Contamination <input type="checkbox"/> 10 CFR 20.2201 Theft or Loss <input type="checkbox"/> 10 CFR 20.2203 30 Day Report <input checked="" type="checkbox"/> Other <u>10 CFR 31.5 (4) (5)</u>	<input type="checkbox"/> 10 CFR 30.50 Report <input type="checkbox"/> 10 CFR 35.3045 Medical Event <input type="checkbox"/> License Condition
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**2. REGION I RESPONSE**

<input type="checkbox"/> Immediate Site Inspection <input type="checkbox"/> Special Inspection <input type="checkbox"/> Telephone Inquiry <input type="checkbox"/> Preliminary Notification/Report <input checked="" type="checkbox"/> Information Entered in RI Log <input type="checkbox"/> Report Referred To: _____	<table border="0"> <tr><td style="width: 50px;">Inspector/Date</td><td style="border: 1px solid black; height: 20px;"></td></tr> <tr><td>Inspector/Date</td><td style="border: 1px solid black; height: 20px;"></td></tr> <tr><td>Inspector/Date</td><td style="border: 1px solid black; height: 20px;"></td></tr> <tr><td><input type="checkbox"/> Daily Report</td><td></td></tr> <tr><td><input type="checkbox"/> Review at Next Inspection</td><td></td></tr> </table>	Inspector/Date		Inspector/Date		Inspector/Date		<input type="checkbox"/> Daily Report		<input type="checkbox"/> Review at Next Inspection	
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<input type="checkbox"/> Daily Report											
<input type="checkbox"/> Review at Next Inspection											

**3. REPORT EVALUATION**

<input checked="" type="checkbox"/> Description of Event <input checked="" type="checkbox"/> Levels of RAM Involved <input type="checkbox"/> Cause of Event	<input checked="" type="checkbox"/> Corrective Actions <input checked="" type="checkbox"/> Calculations Adequate <input type="checkbox"/> Additional Information Requested from Licensee
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**4. MANAGEMENT DIRECTIVE 8.3 EVALUATION**

<input type="checkbox"/> Release w/Exposure > Limits <input type="checkbox"/> Repeated Inadequate Control <input type="checkbox"/> Exposure 5x Limits <input type="checkbox"/> Potential Fatality If any of the above are involved: <input type="checkbox"/> Considered Need for IIT Decision/Made By/Date: _____	<input type="checkbox"/> Deliberate Misuse w/Exposure > Limits <input type="checkbox"/> Pkging Failure > 10 rads/hr or Contamination > 1000x Limits <input type="checkbox"/> Large# Indivs w/Exp > Limits or Medical Deterministic Effects <input type="checkbox"/> Unique Circumstances or Safeguards Concerns <input type="checkbox"/> Considered Need for AIT
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**5. MANAGEMENT DIRECTIVE 8.10 EVALUATION (additional evaluation for medical events only)**

<input type="checkbox"/>	Timeliness - Inspection Meets Requirements (5 days for overdose / 10 days for underdose)
<input type="checkbox"/>	Medical Consultant Used-Name of Consultant/Date of Report: _____
<input type="checkbox"/>	Medical Consultant Determined Event Directly Contributed to Fatality
<input type="checkbox"/>	Device Failure with Possible Adverse Generic Implications
<input type="checkbox"/>	HQ or Contractor Support Required to Evaluate Consequences

**6. SPECIAL INSTRUCTIONS OR COMMENTS**

Non-Public

Public-SISP REVIEW COMPLETE

Inspector Signature: \_\_\_\_\_

Branch Chief Initials: \_\_\_\_\_

Date: 12/30/05

Date: 1/8/06



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
UNITED STATES ARMY AVIATION AND MISSILE COMMAND  
REDSTONE ARSENAL, ALABAMA 35898-5000

Safety Office

Attention: Mr. Jim Dwyer  
U.S. Nuclear Regulatory Commission, Region I  
475 Allendale Road  
King of Prussia, PA 19406

2005 NOV -4 PM 1:25  
RECEIVED  
REGION I

Dear Mr. Collins:

The Radiation Protection section of the AMCOM Safety Office has discovered a leaking Ni-63 source in a gas chromatograph and has taken it out of service per 10 CFR 31.5(c)(5). Specifics are as follows:

6890N Network GC System  
Agilent Technologies  
Model No. G1530N  
Serial No. US10237033  
Cell Model G2397A  
ECD Serial No. U4688  
Ni-63 15 millicuries

The gas chromatograph in question was purchased in September 2002 by Mr. Edward Hayes of the US Army Research, Development and Engineering Command, Propulsion and Structures Directorate, Building 7120 Redstone Arsenal, AL. Mr. Hayes has been using AEA Technology QSA to evaluate leak tests performed on the gas chromatograph. On October 17, 2005 Mr. Hayes was notified of results indicating leaking contamination in excess of  $0.005 \mu\text{Ci}$  on the Inlet Sample. Mr. Hayes immediately notified our office and took the gas chromatograph out of service. On October 18, 2005 AEA Technology QSA retested their wipes and the AMCOM Radiation Safety Officer performed another leak test which it sent to the U.S. Army Test, Measurement, and Diagnostic Equipment Activity (USATA) on Redstone Arsenal for counting. The USATA results and the AEA Technology QSA results confirmed leakage on the ECD inlet. Copies of the leak tests are enclosed.

Mr. Hayes has contracted with Agilent Technologies of Wilmington, DE to remove the ECD, install a new one and ship the leaking ECD back to their company. The AMCOM RSO will oversee the swap-out and perform a leak test on the new ECD.

Questions concerning this action should be directed to Keith Rose, (256) 313-2114, Fax (256) 313-2111 or email [keith.rose@redstone.army.mil](mailto:keith.rose@redstone.army.mil).

Sincerely,

*Arthur Keith Rose*  
ARTHUR KEITH ROSE, CHP  
Health Physicist  
AMCOM RSO

Enclosures



**AEA Technology QSA**  
**6765 Langley Drive**  
**Baton Rouge, Louisiana 70809**  
**Telephone: 225-751-5893**  
**Fax: 225-756-0365**

**Edward Hayes**  
**U S Army RDECOM**  
**AMSRD-AMR-PS-S, Bldg 7120**  
**Redstone Arsenal, AL 35898**

**This is to advise results of the leak test samples analyzed by AEA Technology.**

<b>Isotope</b>	<b>Serial Number</b>	<b>Date of Test</b>	<b>Results</b>
<b>Ni-63</b>			
<b>Sample # 1 (Inlet)</b>	<b>U4688</b>	<b>9-26-05</b>	<b>.0063 uCi</b>
<b>Ni-63</b>			
<b>Sample # 2 (Outlet)</b>	<b>U4688</b>	<b>9-26-05</b>	<b>.0032 uCi</b>
<b>Ni-63</b>			
<b>Sample # 3 ( Housing)</b>	<b>U4688</b>	<b>9-26-05</b>	<b>.00022 uCi</b>

**These samples were taken from a Agilent Ni-63 Cell Model G2397A s/n U4688.**  
**Sample # 1 exceed the limit of .005 uCi indicating a leaking source.**

**Analyzed by Rusty Barrett**

**Date Analyzed: 10-21-05**

## MEMORANDUM FOR AMSAM-SF-A (Mr. Keith Rose)

SUBJECT: Sealed Source Leak Tests


1. The results of leak tests performed at the Research, Development & Engineering Center, Propulsion Directorate, Propulsions Research Division at this facility on 18 October 2005, which this laboratory received on 18 October 2005, are indicated below.

SAMPLE ID	MICROCURIES ( $\mu$ Ci) Ni-63 Beta	DPM Ni-63 Beta
1	0.003	5888
2	0.000005	11
3	0.000002	4.9

Note: Limit of Detection (LD) is 0.000005  $\mu$ Ci (11.8 dpm) for Nickel-63 Beta. Results exceeding the limit of decision are reported as defined by NCRP 58.

2. Traceability to NIST is provided by a Ni-63 source, SN: Ni63-4226C-2-59, last calibrated date: 9 Apr 2004. All counters used to evaluate your leak/wipe tests were calibrated with sources calibrated at or traceable to NIST. The NIST calibration documents are maintained on file at this facility. This laboratory is ISO-9001:2000 registered.

3. Point of contact for this correspondence is Carla J. White, voice on DSN 746-7666, commercial (256) 876-7666, e-mail at [carla.white@us.army.mil](mailto:carla.white@us.army.mil); or the undersigned, voice on DSN 746-0472, commercial (256) 876-0472, e-mail at [stephenv-howard@us.army.mil](mailto:stephenv-howard@us.army.mil).

  
STEPHEN V. HOWARD, CHP  
Lead Health Physicist, Nuclear Counting  
and Special Projects

