

RI - DNMS Licensee Event Report Disposition

Licensee:	Wahneemann University				
Event Description:	Landfill Alarm				
License No:	370047-36	Docket No:	03034006	MLER-RI:	2007-010
Event Date:	05/05/07	Report Date:	05/11/07	HQ Ops Event #:	not reportable

1. REPORTING REQUIREMENT

<input checked="" type="checkbox"/> 10 CFR 20.1906 Package Contamination	<input type="checkbox"/> 10 CFR 30.50 Report
<input type="checkbox"/> 10 CFR 20.2201 Theft or Loss	<input type="checkbox"/> 10 CFR 35.3045 Medical Event
<input type="checkbox"/> 10 CFR 20.2203 30 Day Report	<input type="checkbox"/> License Condition
<input type="checkbox"/> Other _____	

2. REGION I RESPONSE

<input type="checkbox"/> Immediate Site Inspection	Inspector/Date	
<input type="checkbox"/> Special Inspection	Inspector/Date	
<input checked="" type="checkbox"/> Telephone Inquiry	Inspector/Date	P. Lanzetta / 5-18-07
<input type="checkbox"/> Preliminary Notification/Report	<input type="checkbox"/> Daily Report	
<input checked="" type="checkbox"/> Information Entered in RI Log	<input checked="" type="checkbox"/> Review at Next Inspection	
Report Referred To: _____		

3. REPORT EVALUATION

<input checked="" type="checkbox"/> Description of Event	<input checked="" type="checkbox"/> Corrective Actions
<input checked="" type="checkbox"/> Levels of RAM Involved	<input checked="" type="checkbox"/> Calculations Adequate
<input checked="" type="checkbox"/> Cause of Event	<input type="checkbox"/> Additional Information Requested from Licensee

4. MANAGEMENT DIRECTIVE 8.3 EVALUATION

<input type="checkbox"/> Release w/Exposure > Limits	<input type="checkbox"/> Deliberate Misuse w/Exposure > Limits
<input type="checkbox"/> Repeated Inadequate Control	<input type="checkbox"/> Pkgng Failure > 10 rads/hr or Contamination > 1000x Limits
<input type="checkbox"/> Exposure 5x Limits	<input type="checkbox"/> Large# Indivs w/Exp > Limits or Medical Deterministic Effects
<input type="checkbox"/> Potential Fatality	<input type="checkbox"/> Unique Circumstances or Safeguards Concerns
If any of the above are involved:	
<input checked="" type="checkbox"/> Considered Need for IIT	<input checked="" type="checkbox"/> Considered Need for AIT

Decision/Made By/Date: _____

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 checked="" type="checkbox"/> HQ or Contractor Support Required to Evaluate Consequences

6. SPECIAL INSTRUCTIONS OR COMMENTS

Review during next inspection

<input type="checkbox"/> Non-Public	Inspector Signature: <u>[Signature]</u>	Date: <u>5-22-07</u>
<input checked="" type="checkbox"/> Public-SUNSI REVIEW COMPLETE	Branch Chief Initials: <u>[Signature]</u>	Date: <u>5/22/07</u>

U.S. NUCLEAR REGULATORY COMMISSION		Date: 5-18-07
TELEPHONE CONVERSATION RECORD		Time: 5 pm
Mail Control or Report No(s).	N/a	License No(s). 37-00467-36
		Docket No(s). 030-34066
Name of Licensee:	Hahnemann University	
Name of Participant(s):	Kent Lambert, RSO	
Telephone No.	215-762-8768	
Subject: (NOTE: This will be used as the Documents Title in ADAMS)	Landfill alarm followup	
Summary:	<p>Mr. Lambert researched the cause of a landfill alarm on 5-2-07 that was attributed to waste received from Hahnemann University. The waste was identified as I-125 on May 15 and measured a maximum of 4.2 mR/hour on contact. Mr. Lambert's research noted that 5 patients were treated on May 1, 2007 with 50 millicuries of I-125 tagged to a monoclonal antibody per patient. The antibody is injected into an IV port with a saline IV bag also attached to the port. The system was flushed with saline to ensure that any residual monoclonal antibody was placed within the patient. The syringe and needles were appropriately discarded to the radioactive trash. A confirmatory survey of the delivery system is normally conducted, but was not performed for these patients. Mr. Lambert believes that residual contamination remained in one or more of the IV ports/saline bags that were sent to be autoclaved and then out for disposal. Mr. Lambert re-instructed the radiation oncology staff on proper survey techniques and requirements and will begin receiving a copy of all survey results to review after every treatment.</p> <p>Based on the contact dose rate measurements, the approximate activity would be less than 10 microcuries.</p>	
Action Required:	Review at next inspection.	
Document Availability:	<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available <input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Non-Sensitive Copyright <input type="checkbox"/> Sensitive <input type="checkbox"/> Sensitive Copyright <input type="checkbox"/> Immediate Release <input checked="" type="checkbox"/> Normal Release <input type="checkbox"/> Delay Release Date	
Prepared & SUNSI Review Completed By:	Penny Lanzisera	/ RA / Date: 5-18-07



Jim Fongheiser

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Telephone (610) 431-4027

May 15, 2007

Terry Gadd
Environmental Compliance Manager
J.P. Mascaro & Sons
2650 Audubon Road
Audubon, PA 19403

Re : Source Identification at Pioneer Crossing

Dear Mr. Gadd,

It is my pleasure to provide health physics services for you at **J.P. Mascaro & Sons**.

This letter is a summary of our activities at Pioneer Crossing regarding the radioactive material discovered on May 2nd, 2007.

You called me to discuss the discovery on May 2nd. On May 3rd, you forwarded several spectrum collected on site and a potential identification of Americium-241. Because the bag contained easily identifiable medical waste, I believed the source was misidentified as Am-241 (shielded) on one attempt and listed as unknown on all other attempts.

The source was secured and dose rates were taken over the next week or so to obtain data that would support determining a half-life of the isotope. No significant drop in dose rate was seen. After several more phone conversations and e-mails we determined that I needed to visit to assist with this task.

On May 15th I visited Pioneer Crossing and examined the bag of material with you and your site environmental representative. I had an XRF Model ICS-4000, SN: 004257 to do a characterization. The highest dose rate on the bag was 4.2 mR/hr. Sorting through the contents we found 5 different IV bags with tubing and injection ports, each of which were contaminated. Individually, the dose rates were as high as 450 uR/hr on the ports. On each item, the isotope was identified as I-125, with 99% confidence within just a few seconds. I can state with certainty after seeing the waste and the results from the XRF, ICS-4000 that the isotope is I-125, with a half-life of 60.1 days, which meets the criteria for disposal in accordance with the Pioneer Crossing Action Plan.

The site's Exploranium MCA seemed to be operating normally and was able to identify Cs-137 and Co-57 in a test I performed. The misidentification may be due to the fact that I-125's gamma energies are all relatively low and more difficult to resolve from other isotopes with low energy peaks. The algorithm may not handle this situation very well. I suggest that the unit be returned to the manufacturer when due for calibration this summer and have any firmware/software upgrades performed that are available.

If you have any questions or concerns please do not hesitate to call me.

Thank you again for this opportunity.

Sincerely,

A handwritten signature in cursive script that reads "Jim Fongheiser". The signature is written in black ink and is positioned above the typed name.

Jim Fongheiser
Health Physicist

Radiation Alarm Checklist (Field Sheet)

Date: 5/2/07 Time: 08.56 Truck No. R0121

BACKGROUND READINGS:

Dose Rate: 0.0033 (mR/hr) Count: 46 (cps)
(A)

VEHICLE READINGS:

Was the alarm caused by the driver? Y N

†Cab Dose Rate: 0.0028 (mR/hr) Is Dose Rate >2mR/hr? Y N
(If Yes = Action Level 2)

†Surface Dose Rate: 0.014 (mR/hr) Is Dose Rate >50 mR/hr? Y N
(If Yes = Action Level 2)

†Surface count: 385 (cps)

*Surface Wipe Reading: 68 (cps) Is Reading >6,600 dpm/300 cm²? Y N
(B) (If Yes = Action Level 2)

Surface Wipe Calculation (using a 50% efficiency rate):

$$(B) - (A) = \frac{2.2}{(C)} \text{ (cps)}; (C) \times 60 = \frac{132}{(D)} \text{ (cpm)}; (D) / 0.5 = \frac{264}{\text{Surface Wipe}} \text{ (dpm/300cm}^2\text{)}$$

CONCLUSION:

UNKNOWN - POSSIBLY NOT 100% SURE
Isotope Name(s): AMERICIUM - 241 Identified by spectrum analysis? Y N

Location of Highest Dose Rate on Vehicle: REAR (TAILGATE)

Disposition of Load: SEGREGATION AREA* Was DEP consulted? Y N

Form Completed By (print): TERRY GADD (sign): Terry Gadd

† Indicates highest recorded reading

* Vehicle surface wipe should be 300 cm² (approx 7" x 7")

* RAM IDENTIFIED BY JIM FONGHEISER ON 5/15/07 AS I-125. RAM REMAINS IN STORAGE UNTIL DEP APPROVAL. Terry Gadd

Record of Detected RADIOACTIVE MATERIAL

Radiation Survey Form for Waste Processing or Disposal Facilities		
(1.) Customer Name: TENET HAHNEMANN HOSPITAL		(3.) Installation Location: PIONEER CROSSING
(2.) Customer Address: BROAD & VINE STREETS		(5.) Was Alarm Verified by a 2nd Pass by Detectors? YES
PHILADELPHIA, PA 19102		(6.) Installation Supervisor: TOM O'CONNOR
(4.) Date & Time of alarm: 5/2/07: 08.56		(7.) Telephone: (610) 582 2900
(8.) Survey Meter Manufacturer + Model No: EXPLORANUM GR-135	Serial No: 73629	Calibration Date: 8/10/06
(9.) Gamma Spectrometer:	(10.) Person Contacted in PA BRP: SCOTT WILSON Date this form sent to BRP: 5/15/07 BRP Case #: N/A	
(11.) Type of Truck / Trailer: ROLL OFF TRUCK	(12.) Owner of Radioactive Load: HAHNEMANN HOSPITAL	(13.) ORIGIN / DESCRIPTION of Radioactive Material: MEDICAL WASTE
(14.) Vehicle Drivers Name: JOHN RITCHIE	(15.) Was RAM Separated from load? YES	(16.) Identification of Radionuclide: Pa 231, AM-241
(18.) FINAL DISPOSITION of RAM:		(17.) ACTION LEVEL TWO Reached? NO ($>2\mu R/hr$ in cab OR $>50mR/hr$ OR >427)
(19.) Survey Location (key to drawing)	(20.) Dose Rate ($\mu R/hr$)	(21.) Comments (continue below if necessary)
A. Cab/Front		
B. Right side		
C. Right side		
D. Right side		
E. Right side		
F. Left side		
G. Left side		
H. Left side		
I. Left side		
J. Rear	14 $\mu R/hr$	
(22.) # of Survey Meters Used: SAME AS ABOVE.	(23.) Date last calibrated:	(24.) Followup actions:
(25.) Other Findings/Comments: POSSIBLY AM-241; AWAITING CHP DETERMINATION		
(26.) Signs as required: YES		
(27.) $>23,200$ d/m/600 sq cm? NO CONTAMINATION		
Removable Contamination Surveys:		
(28.) Surveyor: TERRY GADD	(29.) Signature: <i>Terry Gadd</i>	(30.) Date of Survey: 5/2/07.