

RI - DNMS Licensee Event Report Disposition

Licensee: Milton S Hershey Medical Center College of Medicine
 Event Description: MISSING I-131 capsule

License No: 37-1383101 Docket No: 03003003 MLER-RI: 2007-030
 Event Date: 10/10/07 Report Date: 11/01/07 HQ Ops Event #: 437106

1. REPORTING REQUIREMENT

<input type="checkbox"/>	<input type="checkbox"/>
<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"/>	Inspector/Date
<input type="checkbox"/> Immediate Site Inspection	<input type="checkbox"/>
<input type="checkbox"/> Special Inspection	Inspector/Date
<input checked="" type="checkbox"/> Telephone Inquiry	Inspector/Date <u>Hendersas 11/1/07</u> <u>Gabriel 11/5/07</u>
<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 <u>- safety inspection is currently open and assigned to Gabriel</u>
<input type="checkbox"/> Report Referred To: _____	

3. REPORT EVALUATION

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Description of Event	<input type="checkbox"/> Corrective Actions
<input checked="" type="checkbox"/> Levels of RAM Involved	<input type="checkbox"/> Calculations Adequate <u>N/A - will review during inspection No immediate</u>
<input checked="" type="checkbox"/> Cause of Event	<input type="checkbox"/> Additional Information Requested from Licensee <u>N/A Safety Concerns</u>

4. MANAGEMENT DIRECTIVE 8.3 EVALUATION N/A

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Release w/Exposure > Limits	<input checked="" type="checkbox"/> Deliberate Misuse w/Exposure > Limits
<input type="checkbox"/> Repeated Inadequate Control	<input type="checkbox"/> Pkging 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
<input checked="" type="checkbox"/> If any of the above are involved:	<input checked="" type="checkbox"/>
<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) N/A

<input checked="" 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

Will be reviewed as part of the current, open safety inspection, 2007-002

Non-Public Inspector Signature: Obahuel Date: 12/11/07
 Public-SUNSI REVIEW COMPLETE Branch Chief Initials: PL for PH Date: 12/13/07

RECEIVED
REGION 1

2007 NOV -9 AM 11: 09

Administration
Mail Code H142
P.O. Box 850
Hershey, PA 17033-0850
(717) 531 8802 Tel
(717) 531 4162 Fax
smancuo@psu.edu

Steven C. Mancuso
Administrator

November 2, 2007

U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Attn: Pamela Henderson

Re: License No. 37-13831-01

Dear Ms. Henderson:

This is a follow-up written report pursuant to our report by telephone on November 1, 2007, in accordance with the requirements of 10CFR20.2201(a)(ii).

Description of the event:

To assist the Hot Lab Tech, at 9:20 AM on October 10, 2007, another Nuclear Medicine Technologist placed a gel capsule containing 55 μCi of ^{131}I into a Leucite® thyroid neck phantom and oriented the phantom for an anterior projection to calibrate the thyroid uptake counting system for dosimetry measurements needed on a thyroid treatment patient. After setting the counter for a ten-minute count she informed the Hot Lab Tech that the sample was counting. She did not stay with the thyroid neck phantom and counting system which was located in an alcove approximately twenty feet from the door to the Hot Lab. While the neck phantom was visible from the doorway of the Hot Lab, the Hot Lab Tech did not have it under constant observation. However, there were Nuclear Medicine personnel in the corridor between the Hot Lab and this alcove almost continuously during the counting procedure.

At 9:38 AM, the Hot Lab Tech oriented the neck phantom for a posterior projection and set the system for a second ten-minute count. When the Hot Lab Tech returned to the Thyroid counter at 10:15 AM, she discovered that only background counts had been recorded for the ten-minute counting period. A check of the neck phantom revealed that it contained no radioiodine capsule.

After an extensive but unsuccessful search by Nuclear Medicine personnel, Health Physics was called for assistance. A Health Physics team spent several hours searching all conceivable areas, but no capsule was found.

Security was notified along with the local police. The local police responded, took fingerprints but, as of yet, have not responded further.

A review of the DVD from the security camera located outside the Hot Lab and Injections rooms failed to determine the fate of the radioiodine capsule but did confirm that there were Nuclear Medicine personnel in sight of the neck phantom for essentially the entire procedure and especially for the 18 minute window (from the end of the first count to the beginning of the second count) when the capsule went missing.

An investigative Committee was formed to query all Nuclear Medicine Technical personnel and Nuclear Medicine nurses and to determine the fate of the missing capsule and/or the root cause of the event. This committee was chaired by the Radiation Safety Officer and included the Assistant Manager of Radiology, the Chief of Nuclear Medicine, the Operations Director for Radiology, the Associate RSO and the Director of Human Resources.

The investigation failed to determine the fate of the missing radioiodine capsule.

The investigation revealed that the Chief Technologist had approved the calibration of the thyroid uptake counting system in the alcove rather than a locked room because he considered the capsule in the neck phantom to constitute "secure."

The investigation revealed some attitude problems on the part of the technical staff and deviation from required "good radiation safety practices" unrelated to the missing capsule.

Corrective actions implemented include:

1. Dismissal of the Chief Technologist.
2. Dismissal of the Hot Lab Technologist responsible for the calibration of the thyroid uptake counting system.
3. Year long probation for all remaining Nuclear Medicine Technologists.
4. Increased training sessions for all Nuclear Medicine Technologists.
5. Relocation of the office of the Assistant Manager of Radiology to the Nuclear Medicine area.
6. Additional security cameras ordered for other areas of Nuclear Medicine.
7. Random review of recordings from security cameras by Health Physics to verify adherence to good radiation safety practices.
8. Changes to the door locks to severely restrict traffic flow in and access to the Nuclear Medicine areas.

9. Increased observation of Nuclear Medicine activities by Health Physics.
10. Increased observation of Nuclear Medicine activities by physicians and residents.
11. Relocation of the thyroid uptake counting system to a room that can be locked when no one is in attendance during a calibration procedure.
12. Requiring that sources being used outside of the Hot Lab will be under the control and responsibility of a single individual for the entire time that the source is out of the Hot Lab.

This incident has been thoroughly reviewed with our Radiation Safety Committee and our Subcommittee on Human use of Radioisotopes.

We will continue to search for the missing source and we will continue close scrutiny of all Nuclear Medicine operations. As of the above date, the fate of the capsule is still unknown. The current activity, due to decay, would be approximately 8 microcuries.

If there is further information that you require, please call Kenneth L. Miller, RSO, immediately at 717-531-8027.

Sincerely,



Steven Mancuso, Administrator
Administrative Representative to the Radiation Safety Committee

cc: Kenneth L. Miller, RSO
David J. Allard, PA BRP
Charlene Corby, HMC Risk Management

Hospital	Event Number: 43766
Rep Org: PENN STATE HERSHEY MEDICAL CENTER Licensee: PENN STATE HERSHEY MEDICAL CENTER Region: 1 City: HERSHEY State: PA County: License #: 37-13831-01 Agreement: N Docket: NRC Notified By: KENNETH L. MILLER HQ OPS Officer: JEFF ROTTON	Notification Date: 11/02/2007 Notification Time: 13:13 [ET] Event Date: 10/10/2007 Event Time: 09:30 [EDT] Last Update Date: 11/02/2007
Emergency Class: NON EMERGENCY 10 CFR Section: 20.2201(a)(1)(ii) - LOST/STOLEN LNM>10X	Person (Organization): GLENN DENTEL (R1) JANET SCHLUETER (FSME) ILTAB (EMAIL) ()

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

Event Text

MISSING I-131 GEL CAPSULE

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The licensee notified NRC Region I (Pam Henderson), Dairy Township Police Department, and Director, PA Bureau of Radiation Protection.

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.