RI - DNMS Licensee Event Report
Disposition

Licensee: Mountainside Hospital

Event Description: Temporary Loss of Byproduct Radioactive Mate

License No: 29 03297-02 Docket No: 03 002470 MLER-RI: 2005-048

Event Date: 6-30-05 Report Date: 7-1-05 HQ Ops Event #: 41818

1. REPORTING REQUIREMENT

- [ ] 10 CFR 20.1906 Package Contamination
- [X] 10 CFR 20.2201 Theft or Loss
- [ ] 10 CFR 20.2203 30 Day Report
- [ ] Other
- [ ] 10 CFR 30.50 Report
- [ ] 10 CFR 35.3045 Medical Event
- [ ] License Condition

2. REGION I RESPONSE

- [ ] Immediate Site Inspection — Inspector/Date
- [ ] Special Inspection — Inspector/Date
- [X] Telephone ~~Inquiry~~ Inspection — Inspector/Date: 8-26-05 D Gabriel
- [ ] Preliminary Notification/Report
- [X] Information Entered in RI Log
- [ ] Report Referred To:
- [ ] Daily Report
- [ ] Review at Next Inspection

3. REPORT EVALUATION

- [X] Description of Event
- [X] Levels of RAM Involved
- [X] Cause of Event - addtl info requested
- [X] Corrective Actions
- [X] Calculations Adequate
- [X] Additional Information Requested from Licensee

4. MANAGEMENT DIRECTIVE 8.3 EVALUATION NA

- [ ] Release w/Exposure > Limits
- [ ] Repeated Inadequate Control
- [ ] Exposure 5x Limits
- [ ] Potential Fatality
- [ ] Deliberate Misuse w/Exposure > Limits
- [ ] Pkging Failure>10 rads/hr or Contamination>1000x Limits
- [ ] Large# Indivs w/Exp>Limits or Medical Deterministic Effects
- [ ] Unique Circumstances or Safeguards Concerns

If any of the above are involved:

- [ ] Considered Need for IIT
- [ ] Considered Need for AIT

Decision/Made By/Date:

5. MANAGEMENT DIRECTIVE 8.10 EVALUATION (additional evaluation for medical events only) NA

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

6. SPECIAL INSTRUCTIONS OR COMMENTS

~~X~~ Non-Public

~~X Public-SISP REVIEW COMPLETE~~ PV

Inspector Signature: Sandra Gabriel Date: 8-4-05

Branch Chief Initials: Date: 11/3/05

Location of File: G:\Reference\Blank Forms\LER FORM.wpd

Rev. 02/25/05

Pkg ML052140474

U.S. NUCLEAR REGULATORY COMMISSION

TELEPHONE CONVERSATION RECORD

Date: 7/26/05

Time: 2:30 p.m.

Mail Control or Report No(s). 03002470/ 2005001 License No(s). 29-03297-02 Docket No(s). 03002470

Name of Licensee:	Mountainside Hospital
Name of Participant(s):	Lydia Tarta, Director of Oncology Service Line (reports directly to COO) Robert Sasso, RSO
Telephone No.	908-522-2037 (Lydia) 973-429-6099 (Robert)
Subject: (NOTE: This will be used as the Documents Title in ADAMS)	Additional information regarding licensee event report of 7/01/05
Summary:	Two to three weeks in advance of removal of the camera, a meeting was held between the consultant physicist and the nuclear medicine chief technologist. The chief tech was instructed to contact Siemens for removal of sources before the camera was removed. The chief tech forgot to do this. At the time of removal of the camera, no one recognized that it contained the sources. Disciplinary action (3-day suspension) was taken against the chief tech.
Action Required:	Place in LER file.

Document Availability: √ Publicly Available ___ Non-Publicly Available

___ Immediate Release √ Normal Release Date ___ Delay Release Date

Prepared & SISP Review Completed By: S. Gabriel Date: 7/26/05

Mountainside Hospital
ATLANTIC HEALTH SYSTEM

Administrator
USNRC Region I
475 Allendale Road
King of Prussia, PA 19406

July 13, 2005

Re: License Number 29-03297-02

Dear Sir or Madam,

Enclosed please find a written report concerning an incident involving the temporary loss of byproduct radioactive material at our institution. If you have any questions, please do not hesitate to contact our Radiation Safety Officer, Mr. Robert Sasso at 973-429-6099.

Thank you for your kind attention in this matter.

Yours Truly,

Lydia N. Tarta /pt

Lydia N. Tarta
Oncology Director

cc: Robert Sasso
Cynthia Hoen

1 Bay Avenue, Montclair, New Jersey 07042 (973) 429-6000

REPORT OF THEFT OR LOSS OF RADIOACTIVE MATERIAL
GD-153 SEALED SOURCE INCIDENT OF 7/1/05

DESCRIPTION OF LICENSED MATERIAL

28 GADOLINIUM 153 LINE SOURCES:

24 PURCHASED FROM ISOTOPE PRODUCTS LABORATORIES

4 PURCHASED FROM DUPONT PHARMACEUTICALS

TOTAL ACTIVITY AS OF 7/1/05: 24.80 MILLICURIES

SEE ENCLOSURES FOR SOURCE SPECIFICATIONS.

DESCRIPTION OF THE CIRCUMSTANCES UNDER WHICH THE LOSS OR THEFT OCCURRED

FRIDAY, 7/1/05

AT 12:20 PM OUR RADIATION SAFETY OFFICER (RSO) WAS INFORMED BY OUR CONSULTANT PHYSICIST (CP) THAT THE SIEMENS E CAM WAS NO LONGER IN THE NUCLEAR MEDICINE DEPARTMENT. THE CHIEF NUCLEAR MEDICINE TECH WAS OUT OF THE HOSPITAL, HOWEVER, THE OTHER TECHS REPORTED THAT THE CAMERA HAD BEEN REMOVED THE PREVIOUS DAY (6/30/05) AND THAT A NEW UNIT WAS TO BE INSTALLED IN ITS PLACE.

THE E CAM EMPLOYS 28 GD-153 SOURCES THAT ARE USED TO PROVIDE ATTENUATION CORRECTIONS WHILE PERFORMING NUCLEAR MEDICINE STUDIES. THE CP DETERMINED THE TOTAL ACTIVITY OF THE SOURCES TO BE ABOUT 25 MILLICURIES.

THE DEPARTMENT MANAGER WAS IMMEDIATELY INFORMED OF THE POSSIBILITY THAT THE SOURCES WERE STILL IN THE CAMERA AND WERE NO LONGER ON SITE. THE CHIEF TECH WAS CONTACTED IMMEDIATELY AND CONFIRMED BY TELEPHONE THAT NO ONE HAD COME EARLIER IN THE WEEK TO REMOVE THE SOURCES. THE CP AND RSO SEARCHED NUCLEAR MEDICINE AND THE SHIPPING DEPARTMENT AND COULD NOT FIND ANY PACKAGE CONTAINING THE SOURCES. THEY ALSO QUESTIONED THE HOSPITAL'S MATERIALS MANAGEMENT PERSONNEL REGARDING PACKAGES SENT OUT THAT WEEK AND REASONED THAT THE SOURCES HAD NOT BEEN DISPOSED OF. THEY CONCLUDED THAT THE SOURCES MUST HAVE BEEN TAKEN WITH THE CAMERA. AT THIS TIME THEY INFORMED ADMINISTRATION OF THE POSSIBILITY OF THE MISSING SOURCES.

THE RSO AND CP THEN ATTEMPTED TO FIND OUT WHAT HAD HAPPENED TO THE CAMERA. THEY LEARNED THAT PHILPS MEDICAL SYSTEMS HAD PURCHASED THE E CAM. THE PROJECT MANAGER FOR PHILIPS SAID PHILIPS HAD CONTRACTED A THIRD PARTY TO REMOVE THE OLD CAMERA AND THAT HE WOULD FIND OUT WHO IT WAS. WE LEARNED THAT THE CARRIER WAS MED-X INC. WE IMMEDIATELY CONTACTED THE CARRIER AND EXPLAINED THE SITUATION. THE DISPATCHER SAID THAT SHE WOULD CONTACT THE DRIVER AND GET BACK TO US.

SHORTLY THEREAFTER, WE RECEIVED A CALL FROM THE DRIVER AND EXPLAINED THE SITUATION TO HIM. HE SAID THAT HE WAS STOPPED AT THE OHIO – PENNSYLVANIA STATE LINE AND THAT HIS DESTINATION WAS ARLINGTON, ILLINOIS. THE CAMERA WAS LOCKED AND SECURED INSIDE HIS TRUCK. HE ALSO INFORMED US THAT HE WAS NOT LICENSED TO CARRY DANGEROUS GOODS. WE INFORMED HIM THAT WE NEEDED TO CONTACT THE NRC REGARDING THE SITUATION AND TO GO NO FURTHER. HE AGREED AND SAID HE WOULD AWAIT FURTHER INSTRUCTIONS.

HAVING ESTABLISHED COMMUNICATION WITH THE DRIVER AND THE LOCATION OF THE CAMERA WE IMMEDIATELY NOTIFIED THE NRC OPERATIONS CENTER AND RECEIVED PERMISSION TO HAVE THE DRIVER TURN AROUND AND BRING THE SOURCES BACK TO THE HOSPITAL.WE IMMEDIATELY INFORMED THE DRIVER OF THIS DEVELOPMENT.

SATURDAY, 7/2/05

AT 2:00 PM, THE MED-X DRIVER ARRIVED AT THE HOSPITAL WITHOUT INCIDENT. THE SOURCES IN THEIR PROTECTIVE FIXTURES WERE UNLOADED FROM THE TRUCK AND SECURED IN THE NUCLEAR MEDICINE HOT LAB. A RADIATION SAFETY SURVEY WAS PERFORMED ON THE SOURCES IN THEIR FIXTURES, THE TRUCK AND IT'S REMAINING CONTENTS. ALL READINGS WERE AT BACKGROUND LEVELS. THE NRC WAS IMMEDIATELY INFORMED OF THIS DEVELOPMENT.

TUESDAY, 7/5/05

AT 9:00 A.M., A SIEMENS ENGINEER REMOVED ALL 28 SOURCES FROM THEIR PROTECTIVE FIXTURES. THE SOURCES REMAIN SECURED IN THE NUCLEAR MEDICINE HOT LAB, AWAITING DISPOSAL.

STATEMENT OF DISPOSITION OF THE LICENSED MATERIAL

WE HAVE CONTACTED ISOTOPE PRODUCTS LABORATORIES CONCERNING DISPOSITION OF THE SOURCES. IT WILL COST $2,800 TO DISPOSE OF THE SOURCES. WE ARE CURRENTLY IN THE PROCESS OF SECURING A PURCHASE ORDER FOR THIS AMOUNT.

EXPOSURES OF INDIVIDUALS TO RADIATION

WE DO NOT ANTICIPATE ANY RADIATION EXPOSURE TO ANY INDIVIDUAL AS A RESULT OF THIS INCIDENT. THE SOURCES WERE CONTAINED IN THEIR PROTECTIVE HOUSINGS THE ENTIRE TIME THEY WERE AWAY FROM THE HOSPITAL AND THE RESULTS OF THE RADIATION SAFETY SURVEY INDICATED ONLY BACKGROUND LEVELS OF RADIATION AT THE SURFACE OF THE DEVICES.

ACTIONS TAKEN TO RECOVER THE MATERIAL

SEE THE ABOVE DESCRIPTION.

PROCEDURES TO INSURE AGAINST THE FUTURE LOSS OR THEFT OF RADIOACTIVE MATERIAL

THE NUCLEAR MEDICINE STAFF HAS RECEIVED COUNSELING REGARDING THIS INCIDENT. THEY HAVE BEEN REMINDED THAT ALL RADIOACTIVE MATERIAL ENTERING THE HOSPITAL IS THE RESPONSIBILITY OF THE HOSPITAL AND MUST BE ACCOUNTED FOR AT ALL TIMES. WE MUST MAINTAIN SURVEILLANCE OF ALL RADIOACTIVE MATERIAL FROM "CRADLE TO GRAVE" WITH NO EXCEPTIONS.

IN ADDITION, IT SHALL BE THE POLICY OF THE HOSPITAL THAT FROM THIS TIME FORWARD, NO NUCLEAR MEDICINE IMAGING EQUIPMENT OR ANCILLARY DEVICE CONTAINING RADIOACTIVE MATERIAL WILL BE DISPOSED OF WITHOUT FIRST INFORMING AND OBTAINING THE CONSENT OF THE RADIATION SAFETY OFFICER OR HIS DESIGNEE.

DuPont Pharmaceuticals Company
Medical Imaging

331 Treble Cove Road, N. Billerica, MA, USA 01862
Telephone: 800-299-3431; Mass. & International 978-667-9531

TECHNICAL DATA

Gd-153 Transmission Line Source Performance Evaluation Sheet

Model Number: NES 8426
Radionuclide: Gd-153
Half-life: 242 days

Lot Number: S8426110-003
Activity: See Attachment A
Reference Date: AUG-2000

SOURCE EMISSION UNIFORMITY

The gadolinium-153 line source emission of 100 keV photons was measured along its length in one centimeter increments. The uniformity was determined by taking the emission of an individual segment and dividing by the mean emission of all the segments. The uniformity of each source was determined to be less than $\pm 10\%$.

PRINCIPLE PHOTON EMISSION (1)

	X-Ray (K)	X-Ray (K)	X-Ray (K)	Gamma-7	Gamma-8
ENERGY (keV)	40.9	41.5	47	97.4	103.2
INTENSITY (%)	34.6	62.5	24.5	29.5	21.1

(1) A Handbook of Radioactivity Measurements Procedures, NCRP Report No. 58, Second Edition, (February 1985).

LEAK TEST CERTIFICATION

The sources in this array were leak tested for contamination and radioactivity leakage utilizing a wipe test technique prescribed by ANSI Standard N542-1977. Leakage/contamination of less than 5.0×10^{-4} microcurie was detected.

Date of Wipe Test: AUG-29-2000

Performed by: Edward Rappa
Edward Rappa

Recommended Procedure:

This leak test procedure is recommended if the user does not already employ an approved procedure.

Wipe all external surfaces of the source or collimating holder with a piece of water moistened filter paper or other suitable "swab".

If the total activity smeared from the source is less than the previous smear test, and less than 5.0×10^{-4} microcurie, then the source is considered leak free. If the total activity measured is significantly more than the previous test value, then the source should be removed from service until the source leakage can be confirmed or other source of contamination found, (even though the detected quantity may be less than specified on the user's license for reportable source leakage).

Report test results in a proper log for future reference.

077013-1098

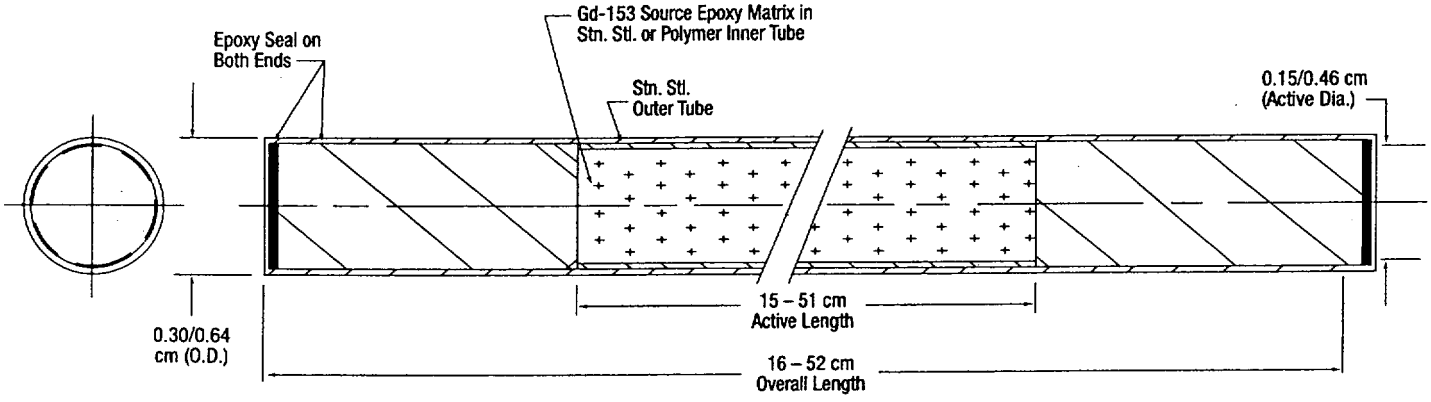
DuPont Pharmaceuticals Company
Medical Imaging

331 Treble Cove Road, N. Billerica, MA, USA 01862
Telephone: 800-299-3431; Mass. & International 978-667-9531

Gd-153 Transmission Line Source Product Information Sheet

Description

The activity is uniformly dispersed in epoxy and drawn into a stainless steel or polymer tube. The stainless steel or polymer tube is inserted into an outer stainless steel tube and permanently sealed with end caps. The source is then placed inside a shielded storage container for shipping and storage. The gadolinium-153 transmission line sources are designed and manufactured to provide maximum safety and service, having satisfied the safety performance requirements of ANSI Standard N542-1977 for classification 77C32314 as recommended for medical radiography sources.



Recommendations

Use & Storage:

1. This source should be used and stored between 10-100°C. Avoid contact with hot surfaces and excessive mechanical stress. The source should not be removed from the camera for autoclaving or any other purpose.

2. When not installed in the gamma camera system, this source should be stored in its container and kept in a restricted access compartment to prevent unauthorized removal or use. The shielded storage container provided with the source is effective for shielding the low energy photons emitted from the source.

Safety:

1. Frequent or prolonged contact with the radioactive portion of the source or source holder with an open shutter can result in significant radiation exposure. Radiation protection procedures should stress the importance of minimum exposure time and maximum handling distance.

Isotope Products Laboratories
An Eckert & Ziegler Company

Medical Imaging Laboratory
24937 Avenue Tibbitts Valencia, California 91355
Tel 661•309•1010 Fax 661•257•8303

Industrial Gauging Laboratory
1800 North Keystone Street Burbank, California 91504
Tel 661•309•1010 Fax 661•257•8303

GADOLINIUM-153 TRANSMISSION LINE SOURCE PERFORMANCE EVALUATION SHEET

NUCLIDE: Gd-153 **QUANTITY:** 4
CATALOG NO.: NES8426-4 **REFERENCE DATE:** Aug 03

SERIAL NUMBER	ACTIVITY
0946078A9	20 mCi (740 MBq)
0946078A10	20 mCi (740 MBq)
0946078A11	20 mCi (740 MBq)
0946078A12	20 mCi (740 MBq)

SOURCE EMISSION UNIFORMITY

The gadolinium-153 line source was imaged along its length in 0.6-centimeter segments. The uniformity was determined by taking the emission of the individual segment having the maximum deviation from the mean and dividing by the mean emission of all segments. The uniformity of each source was determined to be less than ±10%.

***LEAK TEST INFORMATION IS ON THE REVERSE SIDE**

Survey
Bkgrd = 0.03mR/hr
Surface = 0.05mR/hr
3 ft = 0.03mR/hr

LAB BOOK-PAGE: 946 - 78

8-Oct-03
SIGNATURE | DATE

U.S. NUCLEAR REGULATORY COMMISSION TELEPHONE CONVERSATION RECORD	Date: 7/28/05 Time: various

Mail Control or Report No(s).	03002470/ 2005001	License No(s). 29-03297-02	Docket No(s). 03002470

Name of Licensee:	Mountainside Hospital
Name of Participant(s):	Robert Sasso, RSO
Telephone No.	973-429-6099
Subject: (NOTE: This will be used as the Documents Title in ADAMS)	Additional information regarding licensee event report of 7/01/05
Summary:	I asked Robert the following: a) Was the camera crated for shipment. He responded that it was. b) Was crate labeled with UN#, as required for limited quantities radioactive materials shipment. He responded that he does not believe there was a UN#. c) Did driver have Hazmat training? Robert checked with driver, then left a message stating that driver had it in the past, but does not currently have a Hazmat endorsement on his license.
Action Required:	Place in LER file.

Document Availability:	√	Publicly Available	E	Non-Publicly Available
____ Immediate Release	√	Normal Release Date	____	Delay Release Date
Prepared & SISP Review Completed By:	S. Gabriel		Date: 8/02/05	

U.S. NUCLEAR REGULATORY COMMISSION TELEPHONE CONVERSATION RECORD	Date: 8/2/05 Time: 11:20 and 11:30 a.m.

Mail Control or Report No(s).	03002470/ 2005001	License No(s). 29-03297-02	Docket No(s). 03002470

Name of Licensee:	Mountainside Hospital
Name of Participant(s):	Robert Sasso, RSO
Telephone No.	973-429-6099
Subject: (NOTE: This will be used as the Documents Title in ADAMS)	Additional information regarding licensee event report of 7/01/05
Summary:	I asked Robert who was the intended recipient of the camera when it was shipped out with the sources remaining inside. He said it was MedX in Arlington Heights, IL a company that refurbishes gamma cameras. I then called IL Division of Nuclear Safety to determine if MedX is licensed for this material. Spoke with Gibb Vincent at 217-785-9948. He said MedX is a licensee and offered to fax a copy of the license. License confirms that MedX is licensed to possess these sources.
Action Required:	Place in LER file.

Document Availability:		√	Publicly Available	___	Non-Publicly Available
___	Immediate Release	√	Normal Release Date	___	Delay Release Date
Prepared & SISP Review Completed By:	S. Gabriel			Date:	8/02/05