

RI - DNMS Licensee Event Report Disposition

Licensee:	The University of Vermont		
Event Description:	Leaking a reader then allowable limit of 0.005 uci		
License No:	44-0728-15	Packet No:	0303022
Event Date:	6/1/09	Report Date:	6/12/09
		MLER-RI:	2009-10
		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 39.35 ← [Incorrect]</u>	<input type="checkbox"/> 10 CFR 30.50 Report <input type="checkbox"/> 10 CFR 35.3045 Medical Event <input checked="" 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 style="width: 100%;"> <tr> <td style="width: 50%;">Inspector/Date</td> <td style="width: 50%;"></td> </tr> <tr> <td>Inspector/Date</td> <td></td> </tr> <tr> <td>Inspector/Date</td> <td></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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3. REPORT EVALUATION

<input checked="" type="checkbox"/> Description of Event <input checked="" type="checkbox"/> Levels of RAM Involved <input checked="" type="checkbox"/> Cause of Event	<input checked="" type="checkbox"/> Corrective Actions <input 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 <input type="checkbox"/> If any of the above are involved: <input type="checkbox"/> Considered Need for IIT Decision/Made By/Date: _____	<p style="text-align: center;">NA</p> <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 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 type="checkbox"/> HQ or Contractor Support Required to Evaluate Consequences	
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6. SPECIAL INSTRUCTIONS OR COMMENTS

Review next inspection

<input type="checkbox"/> Non-Public <input checked="" type="checkbox"/> Public-SUNSI REVIEW COMPLETE	Inspector Signature: <u>Rust Ulmer</u> Branch Chief Initials: <u>[Signature]</u>	Date: <u>6/26/09</u> Date: <u>7/6/09</u>
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This notification is being made pursuant to 10 CFR 39.35 (2)(d) due to the fact that a 10 mCi Ni-63 electroplated foil sealed source for the purpose of providing beta particle irradiation to discharge electrostatic charges was found to be leaking greater than allowable limit of 0.005 uCi. The University of Vermont's Radiation Safety Office on June 1, 2009 determined this source to be leaking and has removed it from use and it will be disposed. No personnel contamination was detected and radiation contamination was confined to a short section of pipe and a small area inside the inhalation chamber.

Equipment Involved in the Leak:

The equipment involved was a stainless steel inhalation chamber located in room 226 ER2 Votey Building. This room is secure from access by the general public. The Ni-63 sealed source foil is approximately 2 cm x 4 cm and is attached to the inside of a stainless steel air intake pipe approximately 8 inches from the entrance to the bottom of an inhalation chamber. The RSO leak tests this section of pipe on the outside every 6 months and no contamination had been found. The chamber has been inactive for over a year and the RSO was removing the section of pipe that contained the Ni-63 radiation source so the chamber could be disposed. The outside of the tube where the sealed source was located had no contamination but upon removing this section of pipe the inside was found to have contamination present.

Leak Test Results:

A wipe of the actual Ni-63 plated source gave 13 million counts per minute (cpm) using a Wallac 1409 Liquid Scintillation Counter. Background is typically 50 cpm with an efficiency of approximately 70% for this LSC detector. This works out to 8.4 uCi on the wipe test.

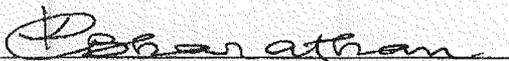
Contaminated Areas:

The pipe leading into the chamber has approximately 4,000 cpm. The RSO is in the process of decontaminating this part. The inside of the inhalation chamber was thoroughly wipe tested and the only area with significant contamination was the floor of the chamber which had 1,400 cpm on a wipe of approximately 1,000 cm². This area was decontaminated and is now at background levels. The floor directly below the section of pipe that was removed had contamination of 44,000 cpm. This wipe was taken over an area of 1,500 cm². The floor was decontaminated and is now at background levels.

Corrective Actions Currently Taking Place:

The RSO has the section of pipe containing the Ni-63 foil sealed source wrapped in plastic and will dispose of it. The RSO is in the process of completely decontaminating the remaining stainless steel pipe that leads into the inhalation chamber. Once all the equipment and areas in the inhalation facility are free of contamination the radiation signage will be removed and the room released for normal use. A full report of this incident will be done upon completion of the decontamination.

This notification was prepared by Thomas Kellogg, Associate Radiation Safety Officer.



Keddy Bharathan
Radiation Safety Officer

6/9/09
Date

cc. Ruth Farrell, VP for Research