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Event Initial Report

Rapport initial d'événement

Windsor Regional Hospital

Exceedance of a regulatory dose limit by a nuclear energy worker during a diagnostic nuclear medicine procedure

Hôpital régional de Windsor

Dépassement d'une limite de dose par un travailleur du secteur nucléaire durant une procédure de médecine nucléaire diagnostique

Commission Meeting

Réunion de la Commission

March 15, 2018

Le 15 mars 2018

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EVENT INITIAL REPORT (EIR)

E-DOCS-# 5477023

EIR: Exceedance of a regulatory dose limit by a nuclear energy worker during a diagnostic nuclear medicine procedure	
Prepared by: Nuclear Substances and Radiation Devices Licensing Division, Directorate of Nuclear Substance Regulation	
Licensee: Windsor Regional Hospital	Location: Windsor Regional Hospital Ouellette Campus, Windsor, Ontario
Licence #: 01462-1-22.0	Have Regulatory Reporting Requirements been met? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Date Event was Discovered: 2017-02-13	Proactive Disclosure: Licensee: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> CNSC: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Overview	
Reporting Criteria: Exposure of a person, organ or tissue to radiation in excess or potential for excess of the applicable radiation dose limits prescribed by the Radiation Protection Regulation.	
<p>Description: During the preparation of Tc-99m MAA (product used for lung scans) on February 13th, 2017, a nuclear medicine technologist, who is also categorized as a Nuclear Energy Worker (NEW), experienced contamination of the right wrist. Technetium-99m has a physical half-life of 6.02 hours and is used for diagnostic medical evaluations.</p> <p>The calculated maximum dose to the skin of the right wrist was 3.6 Sv. The regulatory dose limit is 500 mSv per year.</p> <p>Cause(s): The cause was determined to be a loose syringe shield that had not been tightened adequately on the syringe. Although the NEW wore gloves and a long sleeved lab coat with elastic cuffs, the syringe shield slipped in the NEWs left hand and squirted Tc-99m onto the skin of the NEWs right wrist. After carefully removing gloves and lab coat, the NEW proceeded with decontamination and additional cleaning until the contamination was deemed to be fixed. The NEW acknowledged that the glove may not have been pulled over the sleeve.</p>	
Impact of the Event	
On People:	
How many workers have been (or may be) affected? <u>1</u>	
How many members of the public have been (or may be) affected by the event? <u>0</u>	
How were they affected?	
The person received a dose to the right extremity in excess of the regulatory dose limit. No health effects have been noted since the incident and no physical effects of the exposure are expected.	
On the Environment: None	
Other Implications: None	
Licensee Actions	
<p>Taken or in Progress: The contamination occurred on February 13, 2017, was discovered immediately and the licensee promptly notified the CNSC the same day. The technologist proceeded to decontaminate with Rad Con hand cleaner and Bind It radioactive spray. After additional cleaning, the contamination was deemed to be fixed. Measurements were conducted of the contamination remaining on the wrist.</p> <p>The technologist, who is designated as a NEW, remains employed by the hospital but has been removed from work that could contribute to further radiation exposure.</p> <p>The licensee has investigated the incident, including evaluating the probable cause and discussed lessons learned and has proposed measures to be put in place to prevent recurrence.</p> <p>The licensee worked with the CNSC Radiation Protection Division to validate the dose reconstruction and this was completed on March 6, 2018, leading to the understanding that the extremity dose was much higher than initially considered by the licensee.</p> <p>Planned: Licensee staff will double-check to ensure the syringe shield is adequately tightened on the syringe before drawing up doses. Extended cuff gloves will be purchased to make it easier to extend the glove cuff over the sleeve of the lab coat.</p> <p>The licensee will submit a dose change form to the CNSC to have the dose corrected and is waiting for official direction from the CNSC for return to normal duties.</p>	

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CNSC Actions

Taken or in Progress: CNSC staff worked with the licensee to determine the radiation exposure and validated the final determination of the extremity dose. This final verification by the Radiation Protection Division was completed on March 6 2018.

CNSC staff has reviewed the incident reports (both preliminary and final reports) and the calculated radiation exposures.

The actions taken by the licensee to prevent recurrence are acceptable to CNSC staff.

Planned: CNSC staff will review the information submitted in support of the Dose Change Request for inclusion in the National Dose Registry. CNSC staff will consider the authorization for return to work.

Additional reporting to the Commission Members anticipated:

Yes

No

If Yes, provide method of reporting: N/A

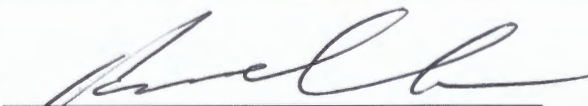
Name and Title	Signature
Colin Moses Directorate of Nuclear Substance Regulation	 Director General P. FUNDAREK MAR 09 2018 Date



Figure 1 Syringe in typical syringe shield