Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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Event Initial Report

Rapport initial d'événement

Alberta Health Services

Exposure above regulatory limit of a Nuclear Energy Worker

Service de Santé de l'Alberta

Dépassement de la limite autorisée pour un travailleur du secteur nucléaire

Commission Meeting

Réunion de la Commission

June 8, 2021

Le 8 juin 2021

Canada

EVENT INITIAL REPORT (EIR)

E-DOCS-# 6570651

EIR: Exposure above regulatory limit of Nuclear Energy Worker at Alberta Health Services	
Prepared by: Nuclear Substance and Radiation Device Licensing Division, Directorate of Nuclear Substance Regulation	
Licensee: Alberta Health Services CNSC Licence #: 1832-17-21.6	**Location:** Walter C. McKenzie Centre 8440 – 112 Street Edmonton, AB
Date Event was Discovered: 2021-05-19	**Have Regulatory Reporting Requirements been met?** Yes ☒ No ☐ **Proactive Disclosure:** Licensee: Yes ☐ No ☒ CNSC: Yes ☒ No ☐

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 Regulations*.

Description: On May 19, 2021 – in accordance with paragraph 29(1)(b) of the *General Nuclear Safety and Control Regulations* (GNSR), and section 16 of the *Radiation Protection Regulations* (RPR), the CNSC was notified by the Radiation Safety Officer (RSO) of Alberta Health Services that a Nuclear Medicine Technologist was reported to have exceeded the regulatory effective dose limit of 50 mSv in a one-year dosimetry period based on their dosimeter result for the first quarter of 2021. The notification came through the dosimetry service provider (Landauer). The technologist was immediately removed from work that could further contribute to their radiation dose. The dosimeter results were as follows:

Deep Dose: 145.83 mSv Lens/Eye: 291.41 mSv Shallow/Skin (PB):449.53 mSv

Upon receipt of this information, the licensee launched an investigation into the possible cause of the high dose report as required under section 16 of the RPR.

In 2019, the licensee reported an event of a similar nature that occurred at the same licensed location. The 2019 incident involved an exceedance of the regulatory effective dose limit of 50 mSv in a one-year dosimetry period based on the dosimeter result of a quarter of 2019. The conclusion of the 2019 event was that the dose was non-personal. The licensee submitted a Dose Change request which was approved by CNSC Staff.

Cause(s): According to the licensee, the dosimeter report received from Landauer for the first quarter of 2021 indicated an irregular exposure in the badge reading. As part of the investigation, the licensee asked for the badge to be re-read by the dosimetry service provider. RSO has spoken with the nuclear medicine technologist in question, who stated that when he was working in the Positron emission tomography (PET) rotation he would leave his badge in a cupboard in the PET hot lab at the end of the day. This cupboard is immediately beside the Rubidium generator that undergoes Quality Control (QC) every morning. Based on this information the licensee has indicated that the dose could be non-personal; however, it is still under investigation.

It is the responsibility of the licensee to adequately store dosimeters when they are not in use. Following the 2019 event, the licensee was to install a shelf to store badges when they are not in use.

Impact of the Event

On People:

How many workers have been (or may be) affected? 1

How many members of the public have been (or may be) affected by the event? 0

How were they affected?

Under Investigation

On the Environment: None.

Other Implications: None.

Licensee Actions

Taken or in Progress: May 20, 2021– Licensee will be continuing their investigation; including assessing the circumstances and resultant exposure to a dosimeter stored in proximity to the Rubidium generator in the PET hot lab. RSO has also requested that Landauer read the dosimeter for a third time. Full investigation into causes is underway.

Planned: To be determined once investigation is complete

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EIR: Exposure above regulatory limit of Nuclear Energy Worker at Alberta Health Services
CNSC Actions
Taken or in Progress: CNSC staff received the initial notification on May 19, 2021 and have initiated the evaluation of the available information at this point. **Planned**: Since there have been two similar events at this location in the past two years, CNSC staff have planned an inspection of the Walter C. McKenzie Center. Two staff from the Operations Inspection Division and the Nuclear Substance and Radiation Devices Licensing Division are coordinating with Radiation Protection Specialist (remotely) to conduct an inspection focusing on the compliance with section 4 of the *Radiation Protection Regulations* (RP 04). This section of the *Radiation Protection Regulations* focuses on the implementation of a radiation protection program that must include as part of said program; keeping the effective dose and equivalent dose received by and committed to persons as low as reasonable achievable, taking into account social and economic factors through the implementation of management control over work practices, personnel qualification and training, control of occupational and public exposure to radiation, and planning for unusual situations. As part of this review, CNSC staff will be looking into the licensee's practices for handling dosimeters at this location including a follow-up to the corrective action proposed as part of the 2019 event. The focused inspection is planned for the week of May 31. **Additional reporting to the Commission Members anticipated:** ☒ Yes ☐ No If Yes, provide method of reporting: Verbal notification at Commission meeting June 8, 2021. Once a full investigation by the licensee is completed and the CNSC has finalized its inspection findings, CNSC staff will provide a report to the Commission.

Name and Title	Signature
Karen Owen-Whitred Directorate of Nuclear Substance Regulations	Recoverable Signature X Karen Owen-Whitred Director General, DNSR Signed by: OwenWhitred, Karen