



Date: 2024-05-08
File / dossier : 6.02.04
e-Doc PDF : 7272174

Update from CNSC Staff

Mise à jour du personnel de la CCSN

Follow up from February 21, 2024
Commission Meeting

Suivi à la suite de la réunion de la
Commission du 21 février 2024

**Update from CNSC Staff on lapses
in radiation protection training at
Canadian Nuclear Laboratories**

**Mise à jour du personnel de la
CCSN au sujet des lacunes dans la
formation sur la radioprotection
aux Laboratoires Nucléaires
Canadiens**

Commission Meeting

Réunion de la Commission

May 22, 2024

Le 22 mai 2024



To Candace Salmon
Commission Registrar

c.c.: Karen Owen-Whitred
Wasif Islam

A

From Luc Sigouin,
Director General
Directorate of Nuclear Fuel Cycle and Facilities Regulation

De

Sigouin, Luc
C=CA, O=GC, OU=
CNSC-CCSN, CN="

2024.05.08
08:23:34
-04'00'

Security Classification – Classification de sécurité

UNCLASSIFIED

Our File – Notre référence

CMD 24-M21

Your File – Votre référence

4.14.02

Date

May 8, 2024

Tel. No. – N° de tél.

(613) 894-3437

Subject / Objet **CNSC staff update on CNL Event titled “Lapses in Radiation Protection training”**

1.0 Background

Canadian Nuclear Laboratories (CNL) requires all staff on site to take Radiation Protection (RP) training as per the level of radiological work to be conducted. Training is dependent on work functions, and each level has a defined schedule for refresher training. CNL employees and contractors are trained to one of the four levels of radiation protection training. A summary of the training levels and the associated work is identified in the table below.

Table 1: Summary of Training Levels

Training Level	Associated Work Responsibilities	Refresher Schedule
Group 1	Group 1 staff conduct radiological assessments and provide radiological advice to other staff.	*None
Group 2	Group 2 staff conduct routine radiological work in accordance with detailed procedures that were reviewed and approved by a Group 1 staff.	3 years
Group 3	Group 3 staff complete radiological work in accordance with a valid work control system in which the radiological assessments and radiation protection measures were approved by a Group 1 staff.	4 years
Group 4	Group 4 staff conduct no radiological work.	5 years

* CNL staff with Group 1 radiation protection training includes health physicists and radiation surveyors.

On January 15, 2024, CNL observed a trend of staff missing required refresher training in the 2023 and 2024 calendar years and raised the issue in their “ImpAct” improvement action and problem identification database. The following day, during routine daily surveillance and monitoring of records in CNL’s ImpAct system, CNSC staff noted the training ImpAct and requested additional information about an extent of condition and associated compensatory measures from CNL.

On January 25, 2024, under Table A, No. A.1 of REGDOC 3.1.2, *Reporting Requirements; Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills*, CNL reported an event where multiple CNL employees had expired radiation protection training [1]. The employees were not notified of the pending expiry in advance or notified of expiry when the training had lapsed. CNL identified that their electronic learning management system (LMS), known as Learn-CNL, was not properly configured to notify all employees of upcoming training requirements, in advance of expiration [2]. An initial assessment of training records by CNL identified over 400 employees with expired radiation protection training.

Following CNL investigation and CNSC staff verification, it was found that this event affected Group 2 and Group 3-trained staff at several CNL sites, with the exception of Whiteshell Laboratories (WL). As part of CNL’s response to a previous event regarding training at the WL site, CNL had implemented a system of tracking worker’s training at the WL site. As a result of this additional tracking, no workers were identified at the WL site with expired radiation protection training.

On February 21, 2024, CNSC staff provided a verbal update to the Commission and shared preliminary information with a commitment to provide the Commission with more details at a future date. This memo provides additional information and follow-up regulatory activities, including a summary of the identified causes, CNL’s corrective actions and results of CNSC staff’s review and assessment.

2.0 CNSC Immediate Actions

Subsequent to CNL reporting the event on January 25, 2024, CNSC staff immediately followed up with CNL to determine the extent of condition and if any radiological work was being performed with staff that were past due for their refresher training. Additionally, CNSC staff held a briefing with CNL senior leadership on January 29, 2024, and required CNL to:

- Ensure that workers present for work are qualified to do the work prior to commencing work.
- Provide an Action Plan detailing specific information on short term, mid-term and long-term actions.
- Conduct a Root Cause Analysis, as well as complete an extent of condition.
- Outline a plan for completing refresher training for staff who have not completed training, based on when their training expired.

CNL confirmed that there was no risk to the public or environment relating to this incident. Furthermore, CNL informed CNSC staff that there was no increase in radiation dose or personnel contamination events at the CRL site.

CNSC staff posted a public disclosure of this event on January 31, 2024 [3]. CNL and CNSC staff continue to hold focused meetings to discuss CNL’s progress of its regulatory commitments, and to maintain regulatory oversight. A focused RP inspection was conducted from February 26th to February 29th, followed by a Human Performance and a Training Inspection conducted from April 15th to April

17th, 2024. Details of the inspections and CNSC follow-up actions are discussed in Section 4 of this report.

3.0 Summary of CNL Actions

Following the event notification to CNSC, CNL submitted a detailed event report [4] that identified that the electronic LMS was not properly configured to notify CNL workers, managers and supervisors of upcoming training requirements, in advance of expiration. The CNL learning management system would only send notifications to workers and managers for employees whose position had a fully implemented Systematic Approach to Training program that included workers in Class 1A and 1B facilities, trades staff and radiation protection personnel. Other positions, such as radioisotope laboratory workers, technician and supervisory staff, do not have a Systematic Approach to Training program and thus did not receive notifications from the learning management system.

CNL provided a corrective action plan [4] that detailed immediate actions taken as well as plans for future actions. CNL has committed to completing a root cause analysis of this event by May 30, 2024, that would include determining the cause of the failure of the learning management system. The risk to employees was addressed upon discovery by restricting radiation work until employees were retrained. CNL confirmed that there was no risk to the public or environment, and there was no increase in dose to workers. CNL is monitoring the progress of the committed actions outlined in its corrective action plan and continues to provide regular updates to CNSC staff during focused technical meetings. CNL will be providing details on its progress at the Commission Meeting and will be available to answer questions.

4.0 CNSC Follow-up Actions

CNSC staff maintain regulatory oversight of the event through focused compliance verification activities, monitoring of CNL's progress against its corrective action plan and follow-up with CNL during scheduled monthly meetings. A timeline of the event is provided in Appendix 1 of this report.

Following the event, on February 29th, 2024, CNSC staff completed a Radiation Protection inspection that confirmed that CNL has taken adequate measures to ensure that no staff were performing radiological work without appropriate radiation protection training. CNSC staff also verified the completion of CNL actions including the completion of training for all affected staff, through periodic field observations. The inspection also verified that staff training is monitored by facility management and training requirements are tracked separately in addition to CNL's learning management system. The inspection confirmed that the event affected Group 2 and Group 3 radiation protection staff and that Group 4 staff were unaffected by the event.

On April 15th to April 17th, 2024, CNSC staff conducted a focused inspection covering Human Performance, Management System and Radiation Protection. The purpose of this inspection was to verify CNL's change control programs, the status of workers' training, qualifications, and the state of the CNL management system regarding its training program. The inspection activities included verification of dose records of employees and contractors, review of completed radiological work assessments, as well as a review of training records of employees and contractors. At the conclusion of the inspection [5], CNSC staff concluded that:

- CNL has manually configured roles to all workers that have taken safety-related training with refresher requirements so that they will receive notifications prior to training expiry.

4.14.02

- CNL has incorporated additional features improving their updated new LMS (Learn-CNL), including updating user roles to better monitor training requirements and adding functionality for managers to efficiently monitor training.
- Mitigation measures have been implemented to support managers/supervisors with LMS including job aids, instructional videos, and meetings.

Furthermore, CNSC staff confirmed that CNL has issued an executive management directive that requires supervisors and managers to verify worker training to ensure workers are adequately trained to perform work. CNSC staff verified that managers and supervisors are verifying training for workers at a set frequency and workers are trained and qualified to execute the work they are assigned.

CNSC and CNL continue to hold monthly focused meetings with CNL regarding this event during which time CNL provides status updates and reports on the progress on its response to date.

CNSC staff will be conducting future compliance verification activities to confirm that CNL has completed and fully implemented all the corrective actions. CNSC staff will continue to monitor and maintain oversight of CNL's response to this event. CNSC staff confirm that there are no risk to the public or environment and dose to all contractors and workers at the CRL site remain ALARA relating to this incident.

List of References:

- [1] Duty Officer Notification - *Lapses in Radiation Protection Group 3 and Group 2 training without notification of expiry by the Learning Management System at CNL/CRL*. January 25, 2024. CNSC internal e-Doc 7212365
- [2] CNL Preliminary Event Report, Event # HSSE-24-0139, *Lapses in Radiation Protection Group 3 and Group 2 training without notification of expiry by the Learning Management System*. CNSC internal e-Doc 7211561
- [3] Public Bulletin, CNSC Website. “*Events Reporting: Research Reactors Canadian Nuclear Laboratories – Chalk River Laboratories Date of event: January 17, 2024*”. <https://www.cnsccsn.gc.ca/eng/acts-and-regulations/event-reports-for-major-nuclear-facilities/event-reporting/research-reactors/>
- [4] CNL Full Event Report, Event # HSSE-24-0139, *Lapses in Radiation Protection Group 3 and Group 2 training without notification of expiry by the Learning Management System*. CNSC internal e-Doc 7224038
- [5] CNSC *Preliminary Facts and Findings Report from Inspection CNL-CRL-2024-05*, April 19, 2024. CNSC internal e-Doc 7259533

Appendix 1: Timeline of Event

Date	Occurrence
January 15, 2024	CNL observed a trend of staff missing required refresher training in the 2023 and 2024 calendar years and raised the issue in their “ImpAct” improvement action and problem identification database.
January 16, 2024	During routine daily surveillance and monitoring of records in CNL’s ImpAct system, CNSC staff noted the training ImpAct and requested additional information about extent of condition and compensatory measures from CNL.
January 25, 2024	On January 25, 2024, CNL reported the event to the CNSC duty officer.
January 29, 2024	At CNSC staff request, CNL senior management provided a briefing to CNSC staff outlining compensatory actions taken and the plan for providing immediate refresher training to staff to ensure staff were adequately trained to perform radiation work.
January 31, 2024	CNL posted a public disclosure of the event on their external website. CNSC staff posted a public disclosure of the event on their website on the same day.
February 5, 2024	CNL confirmed to CNSC staff the completion of expedited radiation protection training to CNL staff and the completion of an extent of condition of field-based safety and compliance training. CNSC staff conducted follow-up compliance verification activities to verify completion of training to impacted CNL employees and contractors.
February 6 and March 6, 2024	CNSC staff conducted general inspections of Class 1B facilities (the Universal Cells shielded facility and the Recycle Fuel Fabrication Laboratory) and verified that staff training is monitored by facility management using spreadsheets in addition to CNL’s learning management system.
February 15, 2024	CNL submitted the full event report to CNSC staff, outlining that a root cause analysis of the event would be completed by May 30, 2024.
February 21, 2024	CNSC staff provided a verbal update to the Commission to share preliminary information on the event.
February 26 to 29, 2024	CNSC staff conducted a planned baseline Radiation Protection inspection at the Chalk River Laboratories site, where CNSC inspectors verified and confirmed that the event affected Group 2 and Group 3 radiation protection staff. Group 4 staff were unaffected since their training is computer-based.
March 20, 2024	The first monthly focused meeting between CNL and CNSC staff regarding this event was held. These monthly meetings were requested by CNSC staff as one method of monitoring the progress of CNL’s response to this event and the state of their corrective actions.
April 15 to 19, 2024	CNSC staff conducted a reactive inspection on training and management system related to this event, to verify the status of CNL’s change control programs and the status of worker training on site.