



CMD 19-M10

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Event Initial Report

Rapport initial d'événement

**Canadian Nuclear Laboratories
(CNL)**

**Les Laboratoires Nucléaires
Canadiens (LCN)**

**Power Outage at Chalk River
Laboratories**

**Panne de courant aux Laboratoires
de Chalk River**

Commission Meeting

Réunion de la Commission

February 20, 2019

Le 20 février 2019

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EVENT INITIAL REPORT (EIR)

E-DOCS-# 5782901

EIR: February 3, 2019 Power Outage at Chalk River Laboratories	
Prepared by: DNCFR, CNLRPD	
Licensee: Canadian Nuclear Laboratories Ltd. (CNL)	Location: Chalk River
Date Event was Discovered: 2019-02-03 CNSC Duty Officer Report, e-Doc 5782847 CNL Preliminary report, e-Doc 5781159	Have Regulatory Reporting Requirements been met? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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:

15) Issues, events, occurrences that the Directors General (DGs) or their designates judge to have potential for repercussions outside the CNSC and for which the DGs or their designates believe the Commission should be informed.

Description:

The Chalk River Laboratories (CRL) experienced a site-wide power outage as a result of an electrical malfunction of a 2400V distribution cable on Sunday, February 3, 2019. At approximately 10 a.m., employees in Building 701 detected the smell of smoke and reported it to CRL emergency personnel.



Figure 1: Aerial view of the Chalk River Laboratories site, with red-circle showing the approximate location of the fire.

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Building 701 is a multi-purpose non-nuclear building situated at the edge of the protected area on the CRL site. It is a multi-level building with security screening and radiation monitoring equipment for personnel on the main floor, and office space on the second floor.

The office space on the second floor houses Operational Health Physics and Radiation Protection (RP) program staff. Routine occupants of the building include Physical Security personnel, Health Physicists, RP personnel who oversee the program, and Contamination Monitors who assist in detecting contamination on items or vehicles being transferred from the Controlled Area to the Supervised Area.

CRL emergency responders immediately conducted an investigation upon notification of the occurrence and checked the area surrounding Building 701, including the underground service space located adjacent to the building. Elevated levels of combustible gas were detected over the vent of the access cover to the service space. The area was immediately isolated for inspection and access to the inspection zone was restricted.



Figure 2: Inspection Zone

The emergency responders then inspected the service space and discovered an electrical cable fire in the adjacent manhole. The CRL Fire Operations team extinguished the fire and safely contained the incident. The CRL Backup Emergency Operations Centre was activated, and the CNSC Duty Officer was notified.

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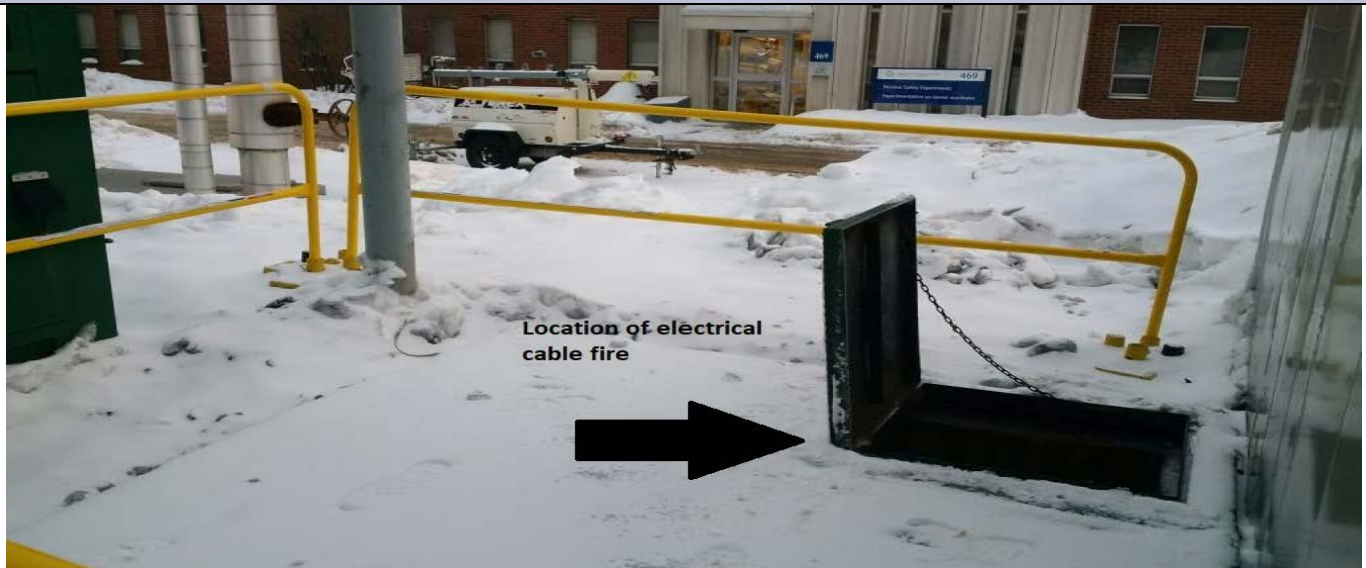


Figure 3: Location of the Electrical Cable Fire

CNL has confirmed that there were no radiological releases and no injuries to the workers. Furthermore, the incident posed no threat to the public, the environment, or nuclear safety. The loss of power did not cause any damages to any buildings or equipment in CRL. According to the Preliminary Report provided by CNL, a Fukushima diesel generator (Figure 4) was used to provide backup power supply as needed to the five affected buildings. This was a diesel generator acquired by CNL for the site in response to the Fukushima action items.



Figure 4: Fukushima Diesel Generator

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<p>Normal power to all of the affected buildings has been restored and personnel are back at work in the building.</p> <p>On the evening of Sunday, February 3, 2019, CNL posted a bulletin on its website and disclosed the incident to the general public.</p> <p>Cause(s):</p> <p>At this time, CNL has not established the probable cause of the fire. CNL is continuing its investigation, which includes inspection of additional service spaces and manholes at the CRL site to confirm that similar conditions do not exist elsewhere.</p>
Impact of the Event
<p>On People:</p> <p>How many workers have been (or may be) affected? <u>0</u></p> <p>How many members of the public have been (or may be) affected by the event? <u>0</u></p>
<p>How were they affected?</p> <p>This event did not result in a dose to the workers or public. There were no injuries to workers as a result of this event.</p>
<p>On the Environment: There were no impacts to the environment as a result of this incident.</p>
<p>Other Implications:</p> <p>There are no immediate implications as a result of this incident. CNSC staff will confirm if there are any other implications, once CNL submits the final report expected by March 4, 2019.</p>
Licensee Actions .
<p>Taken or in Progress:</p> <p>At the time of the incident, CNL activated its EOC and reported the incident to the CNSC Duty Officer. CNL also filed an initial report as required under paragraph 29(1)(d) of the <i>General Nuclear Safety and Control Regulations</i>, “a situation or event that requires the implementation of a contingency plan in accordance with the licence”. Power was restored to all of the buildings as of February 6, 2018.</p> <p>On February 3, 2019, CNL publicly disclosed the information pertaining to the incident by posting a summary of the incident on its website. CNL provided a preliminary event report to CNSC staff. CNL is continuing its investigation which includes inspection of additional service space and manholes, and has yet to determine the probable cause.</p>

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Planned:

As required under subsection 29(2) of the *General Nuclear Safety and Control Regulations*, CNL is required to file a full report with the Commission within 21 days of the event, by March 4, 2019. As indicated in CNL's initial report and follow up by CNSC staff, the situation is under control with no immediate danger or high-risk safety significant concerns. CNSC staff will provide an update to the Commission during the presentation of the CNL Regulatory Oversight Report scheduled for October 2019.

CNSC Actions

Taken or in Progress:

CNSC staff have reviewed the information provided by the CNSC Duty Officer report and CNL's preliminary report. Based on the information provided by CNL, CNSC staff are satisfied that CNL has responded appropriately to the incident. CNSC staff will review the final report, including details of the probable cause and actions taken by the licensee.

The CNSC posted information regarding this incident on its webpage, including a link to CNL's website.

Planned:

CNSC staff will be reviewing CNL's final report that is to be submitted by March 4, 2019. Any corrective actions resulting from the final report will be tracked in the CNSC Regulatory Information Bank (RIB) to ensure their completion. CNSC staff will determine whether any reactive inspection is necessary to ensure effectiveness of CNL's corrective actions.

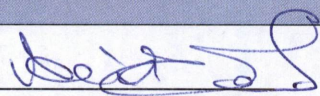
Additional reporting to the Commission Members anticipated:

Yes

No

If Yes, provide method of reporting:

In October 2019, CNSC staff will be providing a Regulatory Oversight Report (ROR) summarizing the performance of all CNL activities in Canada. The ROR will include information on all events reported to the CNSC. CNSC staff will ensure that any information pertaining to this EIR will be communicated to the Commission at the time of the ROR. Unless otherwise directed by the Commission, no additional report on this event will be provided.

Name and Title	Signature
Haidy Tadros DNCFR	 Director General
	<u>15 Feb. 2019</u> Date