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## **Update from CNSC Staff**

## **Mise à jour du personnel de la CCSN**

Follow up from January 25, 2023  
Commission Meeting

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Suivi de la réunion de la Commission du  
25 janvier 2023

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**Update on the Activities CNSC Staff  
Conducted Following the Partial Loss  
of Class IV Power and Heavy Water  
Leak at the Point Lepreau Nuclear  
Generating Station**

**Mise à jour sur les activités que le  
personnel de la CCSN a complétées  
suivant la perte partielle  
d'alimentation de catégorie IV et la  
fuite d'eau lourde à la centrale  
nucléaire de Point Lepreau**

Signed on / Signé le  
2023-09-08

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Directeur général, Direction de la réglementation des centrales nucléaires

## **BRIEFING NOTE FOR THE COMMISSION**

### **ISSUE OR PURPOSE**

This briefing note is to provide the Commission with an update on the activities that CNSC staff conducted following the partial loss of Class IV power and heavy water leak at the Point Lepreau Nuclear Generating Station, which occurred on December 14, 2022. As reflected in paragraph #17 of the [minutes](#) from the January 25, 2023 Commission meeting, the Commission requested CNSC staff and NB Power to provide another update to the Commission regarding the Point Lepreau NGS event once the event investigation is complete.

### **BACKGROUND**

On December 14, 2022, PLNGS experienced a partial Loss of Class IV power due to an electrical fault that occurred on a cable connected to the Unit Service Transformer (UST); shortly after the partial loss of power a heavy water leak from the Heat Transport System occurred. This event was the subject of an Event Initial Report (EIR) presented to the Commission on January 25, 2023 [1].

The CNSC Emergency Operations Centre (EOC) was partially activated on December 14, 2022, to monitor NB Power's response during the evolution of the event. Throughout the event, CNSC staff were present at the NB Power Incident Command Centre and Planning Section to acquire information about the status and progression of the incident and were able to effectively provide this information to CNSC management and specialists through regular updates to the CNSC's WebEOC. CNSC regulatory operations and technical staff verified NB Power's compliance with their processes and procedures during the event.

The response by CNSC staff to monitor the situation was successful and it was noted that the actions in response to the real event felt familiar, just like in an exercise, which demonstrates the value of conducting regular emergency exercises. This was also the first time a hybrid approach to event response was utilized for a real (non-exercise) event and this approach was deemed a success.

Following the event, CNSC staff also conducted planned and reactive inspections in the areas of radiation protection, operating performance, engineering change control, and environmental protection. CNSC staff reviewed and were satisfied with NB Power's submitted event reports.

### **CNSC STAFF COMPLIANCE ACTIVITIES RELATED TO THE EVENT**

#### **Inspections**

CNSC staff carried out planned and reactive inspections, modifying the scope of pre-planned activities such that they included verifications related to the event. The results of the inspections have shown that regulatory requirements were met and the safety of the workers,

public and the environment were maintained throughout the event and continue to be maintained. As a result, no enforcement actions were required. A summary of the inspection activities and key findings is provided below.

December 20, 2022 to January 9, 2023: Radiation Protection Reactive Field Inspection – GPLRPD-2023-FIR-16245/16299:

CNSC staff found that NB Power had appropriate High Hazard Radiation Plans for the entries made into the Reactor Building (RB). CNSC staff confirmed that NB Power staff were using appropriate protective equipment, following correct radiation protection procedures and demonstrating good radiation protection practices. CNSC staff also confirmed that no regulatory dose limits were exceeded by NB Power during the response to the event. NB Power implemented immediate corrective actions to address minor issues related to records management and rubber area maintenance and usage.

December 22, 2022: Planned Operational Field Inspection of the Main Control Room (MCR) – GPLRPD-2022-FIR-15544 #7:

CNSC staff confirmed that NB Power was following procedures to maintain heatsinks and subcriticality of the reactor during the post-event outage. In addition, CNSC staff also verified that key components, such as reactor building ventilation, Shutdown Systems 1&2 and reactivity monitoring equipment were in the correct configuration. CNSC staff concluded that NB Power was in compliance with regulatory requirements.

January 10-12, 2023: Planned Field Inspection of the Engineering Change Control (ECC) – GPLRPD-2023-FIR-16358:

CNSC staff reviewed the modification package for capping the instrumentation lines which caused the heavy water leak during the event. CNSC staff concluded that NB Power appropriately followed their procedures and CNSC staff did not identify any deficiencies with the Engineering Change Documents.

December 22, 2022 to February 16, 2023: Operating Performance Reactive Field) – GPLRPD-2023-FIR-16721:

CNSC staff found that the procedures used by NB Power staff to respond to the event were adequate to allow trained and qualified staff to respond to the event. CNSC staff concluded that NB Power Control Room staff made appropriate decisions as the event progressed, and NB Power demonstrated that adverse conditions were adequately documented and addressed, and areas for improvement and lessons learned were captured. NB Power implemented immediate corrective actions on minor administrative issues related to procedures.

January 16 to January 20, 2023: Planned Type II Inspection on Effluents – GPLRPD-2023-15745:

CNSC staff confirmed that NB Power was effectively implementing their effluent monitoring program. Releases from the event were well below regulatory limits. CNSC staff confirmed that NB Power staff conducted sampling at areas around the plant and the results showed no elevation in tritium (H-3). No non-compliances with regulatory requirements were identified.

## **Review of NB Power Submissions Related to the Event**

As required by REGDOC 3.1.1, *Reporting Requirements for Nuclear Power Plants*, NB Power submitted a Preliminary Event Report on December 22, 2022 and a Detailed Event Report on April 21, 2023. CNSC staff reviewed both reports and raised no concerns.

NB Power issued a Causal Analysis and Complex Troubleshooting Form for the December 14 event which included a total of eight corrective actions to address the causes of the UST cable failure and the subsequent heavy water leak. CNSC staff reviewed the related documents to determine whether NB Power followed the proper processes and took the appropriate corrective actions during the event, and continued to identify and implement appropriate corrective actions following the event. CNSC staff concluded that NB Power's submissions related to the event were adequate. CNSC staff continue to verify that NB Power is implementing all corrective actions. During an upcoming CNSC Type II inspection on electrical power systems beginning September 4, 2023, CNSC staff will follow up on the progression of these corrective actions.

## **CONCLUSION**

Results of the monitoring, reviews, and inspections by CNSC staff confirmed that regulatory requirements were met and that the licensee took appropriate actions such that the safety of workers, the public and the environment were maintained.

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**Reviewed by:** *Alex Viktorov, Director General, DPRR*

**Approved by:** *Ramzi Jammal, Executive Vice-President, ROB*

**Date:** September 8, 2023

## **REFERENCE**

- [1] [CMD 23-M7](#), Event Initial Report, "Partial Loss of Class IV Power and Heavy Water Leak at the Point Lepreau Nuclear Generating Station", presented at the Commission meeting on January 25, 2023, e-Doc 6950536.