



CMD 22-M25
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Status Report on Power Reactors

Rapport d'étape sur les centrales
nucléaires

This document summarizes the status of
the Power Reactor facilities as of
September 2, 2022.

Ce rapport résume le rapport d'étape sur
les centrales nucléaires en date du
2 septembre 2022.

Signed on / Signé le
2022-09-08

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Directeur général, Direction de la réglementation des centrales nucléaires

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1. Power Reactors Status as of September 2, 2022

1.1 Bruce A and B

Operational Status
Unit 1 is at Full Power.
Unit 2 is at Full Power
Unit 3 is at Full Power.
Unit 4 is at Full Power.
Unit 5 is at Full Power.
Unit 6 is Shut Down for Major Component Replacement (MCR).
Unit 7 is at Full Power.
Unit 8 is at Full Power.
Licensing
Power Reactor Operating Licence expires on September 30, 2028.
Comments
<p>Unit 6 Major Component Replacement (MCR) started in January 2020.</p> <ul style="list-style-type: none"> • MCR project is on schedule. • Installation of fuel channels in progress. • Moderator refill preparation in progress. <p>Lutetium-177 Isotope Production System (IPS) has been installed in Unit 7. Hot commissioning activities have been completed. CNSC staff are currently reviewing Bruce Power’s commissioning report.</p>
Event Notifications and Updates
<p><u>Elevated hydrogen equivalent concentration (Heq) in pressure tubes</u></p> <p>In August 2022, CNSC staff submitted to the Registry CMD 22-M37 which provides an update on elevated hydrogen equivalent concentration (Heq) in pressure tubes. The CMD covered the areas of:</p> <ul style="list-style-type: none"> • CNSC staff’s assessment of industry’s Heq research and development plan, including discussion of preliminary results • CNSC staff’s assessment of licensees’ most recent submissions regarding the discovery of elevated Heq, in particular, at the inlet rolled joint of pressure tubes and its impact on fitness for service assessments • Results from CNSC staff’s risk informed decision making assessment <p>The above information will be presented and further discussed at an upcoming Commission Meeting on November 3, 2022.</p> <p><u>Inadequate control of suspect material for Unit 6 Major Component Replacement</u></p>

On August 3, 2022, Bruce Power submitted a REGDOC-3.1.1 report to the CNSC of a possible Counterfeit, Fraudulent, and Suspect Items (CFSI) end fittings for Unit 6 MCR. Further information related to this event and CNSC staff actions is provided in an Event Initial Report (EIR) CMD 22-M28.
Actions from previous Commission meetings
None.

1.2 Darlington

Operational Status
Unit 1 is Shut Down for Refurbishment
Unit 2 is at Full Power.
Unit 3 is Shut Down for Refurbishment.
Unit 4 is at Full Power.
Licensing
Power Reactor Operating Licence expires on November 30, 2025.
Comments
<p>Unit 1 refurbishment started in February 2022.</p> <ul style="list-style-type: none"> • Heat transport system vacuum drying completed • Moderator drain preparation in progress • Turbine reassembly is in progress <p>Unit 3 refurbishment started in September 2020.</p> <ul style="list-style-type: none"> • Moderator fill has been completed • Lower feeder installation in progress • Turbine generator static commissioning is in progress.
Event Notifications and Updates
<p>On July 29, 2022, an OPG contractor was performing welding activities inside a heat exchanger of Unit 1, when a fire occurred. The four involved workers (3 contractor and 1 OPG employee) immediately backed out and the fire was extinguished by the fire monitor. The four workers were treated for potential smoke inhalation and were cleared to return to work. There was no impact to nuclear safety or the environment, and no radiological releases or contamination as a result of this event.</p> <p>OPG notified the Ministry of Labour (MOL), who conducted an inspection on August 4, 2022. The MOL investigation is ongoing. Investigation by OPG and the associated contractor are on-going and have indicated that welding slag/sparks contacted a Foreign Material Exclusion (FME) bung causing it to ignite. Hot work by OPG and the vendor was stood down and released on a case-by-case basis.</p> <p>CNSC staff informed the Registry of the event on July 29, 2022. CNSC staff maintain regulatory oversight of OPG actions in response to the event and will review the detailed event report when it is submitted.</p>
Actions from previous Commission meetings

None.

1.3 Pickering

Operational Status
Unit 1 is at Full Power.
Unit 2 is in a Safe Storage State.
Unit 3 is in a Safe Storage State.
Unit 4 is at 83.8% of Full Power.
Unit 5 is at Full Power.
Unit 6 is at Full Power.
Unit 7 is at Full Power
Unit 8 is at Full Power.
Licensing
Power Reactor Operating Licence expires on August 31, 2028. OPG requires Commission approval to operate PNGS beyond December 31, 2024.
Comments
Unit 4 is derated to 83.8% of Full Power due to a fueling deficit caused by a planned fuel handling outage.
Event Notifications and Updates
None.
Actions from previous Commission meetings
Potassium Iodide (KI) Pill Working Group Update: <ul style="list-style-type: none"> • See Appendix A for the update on the KI Pill Working Group.

1.4 Point Lepreau

Operational Status
The unit is at 98.9% of Full Power.
Licensing
Power Reactor Operating Licence expires on June 30, 2032.
Comments
None.
Event Notifications and Updates
None.
Actions from previous Commission meetings
None.

1.5 Other

Inspectors from the Technical Standards and Safety Authority (TSSA) have been on strike for the past five weeks. During the strike, the non-union employees, such as supervisors with the required training, certification and experience are performing the TSSA inspections. There has been no effect on operations at the NPPs.

See Appendix A for the update on the KI Pill Working Group.

Appendix A

UPDATE ON THE KI PILL WORKING GROUP

Background

Beginning in February 2022, CNSC staff met with the Working Group co-chairs (also known as the signatories to the Terms of Reference) to discuss how to expedite certain Phase II objectives; and, develop a plan and timelines for Phase II. The signatories include the CNSC, Emergency Management Ontario (EMO), Ontario Ministry of Health (MOH), and Ontario Power Generation (OPG).

In May, 2022, the MOH and EMO informed CNSC staff that due to the Ontario provincial election being called (i.e., issuing of the writs), the 'caretaker convention' was triggered and MOH and EMO would not be able to support work on Phase II during the associated provincial 'caretaker period'.

On June 7, 2022, CNSC staff were informed by EMO and MOH that prior to embarking on a multi-jurisdictional workshop, there were concerns on the scope of Phase II that would need to be discussed and addressed with the signatories.

The signatories met on June 20, 2022 to discuss the provincial issues concerning Phase II. EMO and MOH proposed to capture the Phase II objectives under their own initiatives and to align them with the PNERP revision cycle. The Working Group would be utilized by the province as a forum for discussion and input. In accordance with the Terms of Reference, all changes need to be discussed and approved by the signatories, thus CNSC staff requested the province to make a formal submission outlining their proposed changes and path forward.

EMO/MOH Proposed Approach

On August 9, 2022, a joint EMO/MOH response was sent to the CNSC chair of the Working Group providing a written explanation of the proposed approach. The EMO/MOH response states the following:

We understand and appreciate the CNSC initiative to assemble a multi-jurisdictional Working Group (WG) to resolve two issues arising from the 2018 Pickering licensing. The main aspects of this initiative have been:

- *The development of a detailed plan for the emergency distribution of KI pills for the Pickering IPZ.*
- *Examining the feasibility of pre-distribution of KI pills to all schools within the IPZ, as requested by the TDSB.*
- *Assembly of a multi-jurisdictional Working Group, the signatories of which are CNSC, OPG, MOH and EMO, to undertake the work.*

As you know, the Province of Ontario has jurisdictional authority, conferred upon it by the Emergency Management and Civil Protection Act, over offsite nuclear emergency management. As such, EMO/MOH will be implementing a change in the approach for the development of a KI emergency distribution strategy/plan, as well as for the process to examine the issue of KI pill pre-distribution to all IPZ schools.

Our approach will replace the Phase 2 work of the CNSC KI Working group with the following:

- *EMO/MOH will work together to draft a strategy /plan regarding KI pill emergency distribution for the IPZ.*

- *EMO/MOH will circulate the draft to the CNSC KI Working Group members to help inform and “grow” the draft plan/strategy*
- *EMO and MOH will work with the Ministry of Education to examine the advisability of KI pill pre-distribution to all IPZ schools.*
- *Following EMO and MOH resolution of the two issues, applicable provisions will be included in the next version of the PNERP Master Plan/Implementing Plans, as appropriate, and these plans will be brought forward for LGIC approval.*

We believe that our revised approach meets the spirit and intent of CNSC’s aim, while also respecting jurisdictional authorities and the fulfillment of applicable responsibilities.

Following discussions held with Kathleen Heppell-Masys (Director General (DG), Directorate of Security and Safeguards) and Alex Viktorov (DG, Directorate of Power Reactor Regulation) on the proposed approach, CNSC staff requested additional information from EMO/MOH. The following additional information was requested by the CNSC, as well as EMO’s response received on August 30, 2022:

1. Timelines associated with the approach outlined in EMO/MOH’s response
 - EMO response:
 - *Work on a provincial KI emergency distribution strategy is scheduled to begin mid October 2022.*
 - *Consultation with the CNSC KI WG, on the draft strategy, can be expected before the end of current fiscal year.*
 - *Final strategy will be included in the next revision of the PNERP MP anticipated for 2023.*
2. How the additional considerations for Phase II that are captured in the Phase I Report will be completed under the proposed approach. The additional considerations cover:
 - a) Public awareness and education in designated and non-designated municipalities
 - EMO response:
 - *The PNERP Master Plan public education strategy will be reviewed by EMO’s public education unit in light of KI issues.*
 - *This work will include consultation with applicable nuclear public education stakeholders.*
 - *The updated nuclear public education strategy will be included in the next version of the PNERP Master Plan, slated for 2023 approval.*
 - b) Pre-staging of the centralized stockpile to municipalities in the IPZ
 - EMO response:
 - *Pre-staging considerations will be included as a part of the draft provincial KI strategy, expected prior to the end of current fiscal year.*
 - c) Development of a pre-existing emergency communications strategy for use by municipalities and Public Health Units within the IPZ during an event
 - EMO response:
 - *At the provincial level, emergency communications is comprised of:*
 - *Emergency public information pursuant to the Provincial Emergency Information Plan (PEIP) – a Communications function.*
 - *The Emergency Bulletin (EB) process involving broadcast via provincial and municipal alerting systems – an operational function undertaken by the PEOC.*
 - *Emergency communications is recognized as a critical cross-jurisdictional process.*

- *Related plan and procedure development is undertaken through applicable stakeholder consultation.*
 - *The province will be updating the Provincial Emergency Information Plan 2023-2024 timeframe.*
- d) How comments from Curve Lake First Nation concerning the need for KI and emergency related information with an Indigenous focus will be undertaken.

EMO response:

- *EMO is embarking on an Indigenous engagement and consultation program with Indigenous communities throughout Ontario regarding the PNERP Master Plan (slated to begin August 2022)*
- *Issues related to KI will form an integral part of this consultation.*
- *Curve Lake First Nation is included in the process along with other Indigenous communities throughout Ontario.*

Next Steps

Since May 2022 when EMO and MOH first brought forward potential issues with Phase II of the Working Group, CNSC staff have considered additional initiatives to complete some Phase II objectives independently, and more expeditiously. CNSC staff and senior management will assess the EMO/MOH approach and determine the appropriate additional CNSC initiatives to undertake.

CNSC staff have been informed that OPG is working directly with the municipality of Durham to develop a strategy for emergency distribution of KI pills, and intend to execute elements of the strategy during a future emergency exercise. Thereby, CNSC staff are assured that OPG is actively engaging with the municipality of Durham to develop a strategy in the near-term.

Given the impact of the EMO/MOH proposal on the Working Group, and in alignment with the TOR, a signatories meeting at the senior management level is being organized and is anticipated for the end of September 2022. The purpose of this meeting will be to discuss the EMO/MOH proposal and additional CNSC and OPG initiatives; and identify key areas for collaboration between the signatories and Working Group members moving forward.

The CNSC recognizes the valuable contributions of the Advisory Committee and of all Working Group members. Therefore, following the signatories meeting, the CNSC will also engage with the Advisory Committee and the full Working Group on the proposed approach, as well as the additional CNSC activities being considered.

CNSC staff will provide a detailed update to the Commission as part of the Status Update on Power Reactors, in advance of the Commission Meeting on the Regulatory Oversight Report for Nuclear Generating Stations planned for November 2022.

Prepared by: Lee Casterton, Senior Regulatory Program Officer, Pickering Regulatory Program Division

Reviewed by: David Moroz, Director, Emergency Management and Preparedness Division

Reviewed by: Ross Richardson, Director, Pickering Regulatory Program Division

Approved by: Kathleen Heppell-Masys, Director General, Directorate of Security and Safeguards

Approved by: Alexandre Viktorov, Director General, Directorate of Power Reactor Regulation

Date: September 1, 2022

