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Safety Commission

Commission canadienne
de sûreté nucléaire

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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
April 19, 2021.

Ce rapport résume le rapport d'étape sur
les centrales nucléaires en date du
19 avril 2021.

Signed on / Signé le
2021-04-21

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1. Power Reactors Status as of April 19, 2021

1.1 Bruce A and B

Operational Status
Unit 1 is at Full Power.
Unit 2 is at Full Power.
Unit 3 is in a planned maintenance outage
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
Unit 6 Major Component Replacement (MCR) started in January 2020. The end fitting removal has been completed. Bruce Power is transitioning to pressure tube removal and the subsequent removal of the calandria tubes. The project execution is on schedule.
Event Notifications and Updates
None.
Actions from previous Commission meetings
None.

1.2 Darlington

Operational Status
Unit 1 is Starting Up.
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
Unit 3 refurbishment started in September 2020. The project is ahead of schedule with feeder cabinet removal completed on April 10, 2021. The critical path is currently feeder removal.
Event Notifications and Updates
On March 20, 2021, during a scheduled outage on Unit 1, a leak developed through one of the channel closure plugs. The leaking closure plug was resealed and the leak stopped. To prevent unplanned exposure,

workers evacuated containment as per station procedures and expectations. The spilled D2O was contained within the reactor vault and was subsequently cleaned up by workers wearing appropriate PPE. There were no significant releases to the environment and no significant uptakes of tritium by workers.

Actions from previous Commission meetings

None.

1.3 Pickering

Operational Status

Unit 1 is at 89% of Full Power.

Unit 2 is in a Safe Storage State.

Unit 3 is in a Safe Storage State.

Unit 4 is at Full Power.

Unit 5 is at Full Power.

Unit 6 is at Full Power.

Unit 7 is at Full Power.

Unit 8 is in a planned maintenance outage.

Licensing

Power Reactor Operating Licence expires on August 31, 2028. OPG requires Commission approval to operate PNGS beyond December 31, 2024.

Comments

Unit 8 is in a planned maintenance outage that commenced January 11, 2021.

Event Notifications and Updates

On March 2nd, 2021, a Unit 5 Fueling Machine (FM) position sensor failed during fueling. The failure led to one irradiated fuel bundle being damaged inside the Fuelling Machine. Unit 5 FM was unable to discharge the damaged bundle, along with three other bundles in the FM. Inability to fuel the reactor necessitated the shutdown of Unit 5 on March 17, 2021. During this time, the fuel bundles inside the FM were kept cooled by the FM cooling system.

OPG used operational experience from a similar event in 1994 to inform course of action for retrieval of the damaged irradiated fuel bundle from the FM. On March 29, 2021, OPG safely retrieved the damaged irradiated fuel bundle and placed it within a shielded flask. The remaining fuel bundles were transferred as per normal operations.

Unit 5 FM was thoroughly inspected and returned to service. Unit 5 was restarted and returned to Full Power on April 13, 2021.

Actions from previous Commission meetings

Potassium Iodide (KI) Pill Working Group Update:

- On April 6th the draft Phase I Report was posted on the CNSC consultation platform (<https://www.letstalknuclearsafety.ca/kipillworkinggroupdraftreport>) for a 90-day public review period.

- The public review period was also advertised through the CNSC subscription list and CNSC social media accounts on the following platforms:
 - Facebook – <https://www.facebook.com/CanadianNuclearSafetyCommission>
 - Twitter – https://twitter.com/CNSC_CCSN
 - LinkedIn – <https://ca.linkedin.com/company/cnsc-ccsn>
 - YouTube – <http://www.youtube.com/cnsc-ccsn>
- Background information on the Working Group can be found on the Working Group webpage: <https://nuclearsafety.gc.ca/eng/resources/emergency-management-and-safety/potassium-iodide-pill-working-group.cfm>
- Following the public review period, the Working Group will disposition all comments received and revise the draft Phase I report, as appropriate. The report will be presented to the Commission in a Public Meeting anticipated for fall 2021.

1.4 Point Lepreau

Operational Status
The unit is Shut Down.
Licensing
Power Reactor Operating Licence expires on June 30, 2022.
Comments
None.
Event Notifications and Updates
<p>On February 5th, during station re-start activities, flames were observed on the top of primary heat transport (PHT) pump motor 3. NB Power staff manually tripped the reactor using Shutdown System 1 (SDS1), stopped all four PHT pumps and extinguished the fire. No release of radioactivity or worker exposure occurred and there were no injuries to workers.</p> <p>NB Power staff inspected the damaged motor and determined that degradation of neoprene in the pump motor brake assembly resulted in overheating and fire. NB Power conducted an extent of condition assessment and replaced affected elements in the PHT pump motor brake assemblies. The pump motor 3 was removed and replaced with a spare pump motor. NB Power completed repairs and safely returned the plant to service on February 26, 2021.</p> <p>On April 17 one of the station turbine exhaust rupture discs failed. This caused the turbine to trip and NB Power staff manually shut the reactor down using SDS1. The unit is currently shutdown while troubleshooting is ongoing to determine the cause of the failure. No release of radioactivity or worker exposure occurred and there were no injuries to workers.</p> <p>CNSC staff maintains regulatory oversight of NB Power actions in response to both events and will review the root cause analysis and the detailed event reports when they are completed by NB Power.</p>
Actions from previous Commission meetings
None.

1.5 Other

Response to Articles and Opinions Published in the Media

Recently, there have been articles and opinions published in the media, in particular the Globe and Mail, questioning the Commission's decision to grant the Pickering Nuclear Generating Station (PNGS) a ten year licence on the basis that the plant had surpassed the originally planned life expectancy of the pressure tubes. The CNSC responded to the editor of the Globe and Mail in a letter, which was not published by the newspaper. The letter was posted to the CNSC website for public viewing ([CNSC response to the article published in the Globe and Mail on March 23, 2021 - Canadian Nuclear Safety Commission](#)) on March 26, 2021; it is reproduced in Annex A. The CNSC response was also communicated to our employees (Annex B), and to the email and twitter subscribers.

The CNSC is confident in its recommendations and technical positions, and the transparency with which it brings matters to the Commission. In 2018 the Commission held a five-day public hearing to consider OPG's application for continued operation over a ten-year period. The Commission listened to and questioned the scientific and expert evidence presented, including detailed information on the safety of the pressure tubes and concluded that OPG is qualified to conduct PNGS operations in a safe manner; and that continued operation of PNGS until December 2024 would not negatively impact the health and safety of persons and the environment as OPG meets all safety requirements. Any nuclear facility can only be licenced in Canada if it meets the applicable safety requirements.

Given there has been no new evidence raised, the CNSC stands by its regulatory position that the PNGS pressure tubes are fit for service.

Power Reactor Regulatory Program (PRRP) COVID-19 Activities

Compliance

CNSC staff continue their oversight of NPP operations, by carrying out inspections, having access to the licensees Virtual Private Network (VPN), attending meetings remotely and conducting regular surveillance activities. Inspections are being conducted on sites, as well with remote support from subject matter experts. To date CNSC staff have not identified any non-compliances caused by the pandemic and are satisfied with the measures taken by the licensees.

Licensing

DPRR continues to ensure all licensing activities are completed in accordance with requirements, in support of continued safe operation of all Canadian NPPs.

International Collaboration

Under the auspices of the Nuclear Energy Agency, a virtual conference was held on 24-25 February 2021 where nuclear regulatory bodies from ten countries presented on their regulatory body's experience inspecting nuclear facilities, vendor sites, and human and organizational factors during the pandemic. The outcome and

themes of the presentations are being drafted and should be issued within the month. A virtual meeting of Working Group on Inspection Practices was held 12-14 April, 2021 where approaches to targeted, risk informed regulation in COVID-19 pandemic conditions were discussed.

Licensee COVID-19 Activities

Business Continuity Plan Status

All licensees have active business continuity plans (BCP). Licensees have protocols in place for responding to positive test results for their workers and report to CNSC regularly. CNSC staff are monitoring and evaluating licensees' COVID-19 responses and are satisfied with the current provisions.

Bruce Power

Bruce County is currently subject to the Ontario Province-wide Stay at Home Order, effective April 8, 2021. The Grey Bruce health unit has declared a "critical threshold" because of a sharp increase in new cases (over 70 across the health unit in 36 hours).

To date ninety-six (96) Bruce Power workers (employee and contract) have tested positive for COVID-19. Eighty-six (86) of these cases are considered recovered with ten (10) remaining active. There has been no evidence of workplace transmission of COVID-19 and there has been no impact on minimum shift complement or the safe operation of the units from positive COVID-19 cases.

Ontario Power Generation

Durham Region is currently subject to the Ontario Province-wide Stay at Home Order, effective April 8, 2021.

To date seventy (70) OPG Darlington workers (employee and contract) have tested positive for COVID-19. Fifty (50) of these cases are considered recovered with twenty (20) remaining active. On March 8, 2021 the Durham Regional Health Department declared a COVID-19 outbreak resulting from possible workplace transmission at the Darlington Nuclear Generating Station after three (3) employees from the same work group tested positive for COVID-19. To date a total of five (5) cases have been identified within this work group. The outbreak has not yet been declared over. There has been no impact on minimum shift complement or the safe operation of the units resulting from positive COVID-19 cases.

To date eighty (80) OPG Pickering workers (employee and contract) have tested positive for COVID-19. Seventy (70) of these cases are considered recovered with ten (10) remaining active. On April 16, 2021 the Durham Regional Health Department declared a COVID-19 outbreak resulting from possible workplace transmission at the Pickering Nuclear Generating Station after four (4) employees from the same work group tested positive for COVID-19. To date no other cases have been identified within this workgroup. The outbreak declaration is to last for 16 days. There has been no impact on minimum shift complement on the safe operation of the units resulting from positive COVID-19 cases.

Point Lepreau

There have been no new COVID-19 cases identified at site since the last update. To date, there have been two (2) positive cases at Point Lepreau NGS. There has been no impact on minimum shift complement on the safe operation of the units resulting from positive COVID-19 cases.

The PLNGS COVID Response Team (CRT) continue to manage the COVID-19 response at site. The Northwestern region of New Brunswick is at the red alert level, while parts of Zone 4 (Edmunston and Haut-Madawaska) have gone into lockdown. The rest of New Brunswick remains at the yellow alert level.

Reporting of COVID-19 Cases to CNSC

On December 10, 2020 the Directorate of Power Reactor Regulation issued clarifications to promote consistent reporting of COVID-19 cases:

1. Formal event reports, in accordance with REGDOC-3.1.1, *Reporting Requirements for Nuclear Power Plants* are to be submitted for situations:
 - where a person who had entered the protected area was later found to be COVID-19 positive, leading to isolation measures being imposed in case the virus had been transmitted to others
 - any impact, attributed to COVID-19, on the Minimum Shift Complement (MSC) positions outlined in the respective Licence Condition Handbooks
2. For all other COVID-19 related events, not having operational or safety impacts, courtesy informal notification will continue to be made to the Regulatory Program Directors.

The following represent cases reported to the CNSC under the clarified reporting requirements of REGDOC-3.1.1. These cases occurred after December 10, 2020:

Bruce Power

There have been four (4) reportable cases. There has been no evidence of workplace transmission of COVID-19 and no impact on minimum shift complement or the safe operation of the units resulting from positive COVID-19 cases. CNSC staff are satisfied with the response and protective measures taken by Bruce Power.

Ontario Power Generation

OPG Darlington has reported nine (9) cases. There has been no impact on minimum shift complement or the safe operation of the units resulting from positive COVID-19 cases. CNSC staff are satisfied with the response and protective measures taken by OPG Darlington.

OPG Pickering has reported nine (9) cases. There has been no impact on minimum shift complement or the safe operation of the units resulting from positive COVID-19 cases. CNSC staff are satisfied with the response and protective measures taken by OPG Pickering.

New Brunswick Power

There have been zero reportable cases.

Annex A**CNSC response to the article published in the Globe and Mail on March 23, 2021**

The article titled "[Nuclear regulator overlooked puzzling inspection data when renewing licence for Pickering plant, documents show](#)" demonstrates how complex nuclear regulation is. However, some clarity must be provided.

At no time did CNSC staff overlook any data. They did their jobs – analyzing the data and models, and asking questions about them as required. Our staff are dedicated to keeping the community, workers and environment safe. They will never compromise safety and, if necessary, can shut down any nuclear facility or activity, in order to protect the public and the environment. We must absolutely challenge the data to make sure licensees operate safely.

In 2018, after a 5-day public hearing where the Commission heard from staff and intervenors, the Commission authorized Pickering Nuclear Generating Station to operate until December 2024, as long as it continues to demonstrate that it meets all safety requirements. Any operation beyond that date requires a public Commission licensing hearing and approval.

Annex B**Communication to All CNSC Staff in response to the article published in the *Globe and Mail* on March 23, 2021**

Good morning colleagues,

As you may know, this week the *Globe and Mail* published an article titled “Nuclear regulator overlooked puzzling inspection data when renewing licence for Pickering plant, documents show”. I want to share with you my deep frustration, as I am sure you experienced as well, with how the journalist depicted our regulatory oversight including quotes with inflammatory language. I wrote a letter to the editor in response to this article, but unfortunately, the *Globe and Mail* opted not to publish it. We will however be posting my letter to our website and promoting it through our social media channels.

I want to reinforce with you how proud I am to work with such brilliant minds. You are exceptional at your work and I commend you for the strong regulatory oversight you provide in order to keep the public and environment safe. I am confident in your rigorous analysis, questioning attitudes and thorough review and compliance verification. We must continue to challenge the information we receive, to make sure that licensees are operating safely and can continue to operate safely. We are dedicated to keeping the community, workers and the environment safe and will never compromise safety.

In 2018, after a 5-day public hearing where the Commission engaged in lengthy discussions with staff and intervenors, including technical experts, the Commission authorized Pickering Nuclear Generating Station to operate until December 2024, as long as it continues to demonstrate that it meets all safety requirements, including new requirements on pressure tubes. Any operation beyond this date requires a public Commission licensing hearing and approval. It is the Commission’s expectation and a requirement of Ontario Power Generation, that the last day of operation for Pickering NGS will be as safe as its safest day of operations.

Keep your heads held high. I welcome your feedback and encourage you to continue to speak up when you hear defamatory language and information such that we saw this week.

Ramzi Jammal

Executive Vice President and Chief Regulatory Operations Officer.

Premier vice-président et chef de la réglementation des opérations

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