PORT GRANBY PROJECT 2019 ANNUAL COMPLIANCE REPORT EXECUTIVE SUMMARY

This annual compliance monitoring report for the 2019 calendar year has been prepared as per licence condition 3.1 of the Port Granby Long Term Low Level Radioactive Waste Management Project Licence WNSL-W1-2311.02/2021 [1] and of the *Port Granby Long-Term Low-Level Radioactive Waste Management Project Licence Conditions Handbook* [2] as a summary report of annual compliance monitoring and operational performance.

The Port Granby Long-Term Low-Level Radioactive Waste Management Project is part of the larger Port Hope Area Initiative (PHAI). The PHAI is a community-based project designed to develop and implement a safe, local, long-term management solution for historic low-level radioactive waste (LLRW) within the Port Hope and Clarington municipalities. The PHAI is defined by *An Agreement for the Cleanup and Long-Term Safe Management of Low-Level Radioactive Waste Situated in The Town of Port Hope, The Township of Hope and the Municipality of Clarington* [3], which took effect on 2001 March 29, between the Government of Canada and the municipalities of Port Hope and Clarington for the management of the LLRW within each of the communities. Canadian Nuclear Laboratories (CNL) is responsible for the direction and execution of the PHAI in compliance with the Legal Agreement, licences and Environmental Assessment decisions. CNL has overall responsibility for managing the PHAI on behalf of Atomic Energy of Canada Limited, a federal Crown corporation.

This report provides site-specific information to supplement information in the *Annual Compliance Monitoring Report for Canadian Nuclear Laboratories* [4], which provides corporate updates to 14 Safety and Control Areas as they are applied across all CNL. Performance highlights for 2019 activities are outlined below.

Management system

- CNL completed all required reporting as outlined in Licence Condition 3.1, *Licence Conditions Handbook* [2].
- SAI Global 12 Month Surveillance Audit conducted an ISO 9001:2015 audit on the PHAI Historic Waste Program and Chalk River Corporate site, resulting in the recommendation to continue CNL's ISO 9001:2015 certification.

Human performance management

- A wide range of mandatory and other job-specific training activities were carried out in 2019 to ensure all personnel have mandated training as appropriate for their duties.
- The PHAI implemented a SAT-based training program (Systematic Approach to Training), for the PG Waste Water Treatment Plant (WWTP) Operations Supervisor position and the PG WWTP Operations Technician position.

Facility and Equipment

- CNL continued to manage the PG LTLLRWM project site during remediation activities in accordance with approved procedures, as outlined in the Licence Conditions Handbook [2].
- Cleaning and removal of temporary baker/frac tanks was completed.
- Internal roadways were re-aligned as required throughout 2019, to maintain efficient haul routes between the waste materials and the containment mound.
- The Veolia treatment plant was decommissioned.
- As the Port Granby Waste Water Treatment Plant (PG WWTP) performance improved, four of the lake tanks were decommissioned and removed from site. The remaining tanks will provide emergency storm water storage, and operational flexibility for the PG WWTP.
- Excavation and remediation verification of Phases 2, 3 and 4 were ongoing throughout most of 2019.
- Excavation of LLRW PGWMF and transport of LLRW to LTWMF continued in 2019. 392,405 tonnes were hauled and placed in containment. Residual solids from the WWTP were placed in Cell 1. Quantities are noted below in Table 4-2. Approximately 70 % of the capping materials were placed on Cell 2.

Safety analysis

- As per the *Licence Conditions Handbook* [2], the Safety Analysis Program is not applicable to the Port Granby Project.

Physical Design

- Efforts to improve operation of the facility were made as CNL utilized CRL Design Engineering to implement fixes and upgrades to existing equipment following CNL's Engineering Change Control process. These changes included increasing the evaporative capacity of the site with a new mobile evaporator, addition of cement mixers to maximize residuals management, addition of brine return pumps to improve efficiency of solids management on site, addition of portable tanks for slurry management, addition of redundant clarifier pumping systems to minimize system downtime and addition of mezzanines to allow for safer access to equipment.

Fitness for service

- As per the *Licence Conditions Handbook* [2], the Fitness for Service Program is not applicable to the Port Granby Project.

Radiation protection

- Radiation Protection doses for workers remain As Low As Reasonably Achievable (ALARA) and doses for public remain low.

- ALARA initiatives and activities continue to be at the forefront of the PGP Radiation Protection Program. In 2019, training sessions were conducted to refresh staff on radiation protection requirements and the use of air monitoring systems.

Conventional health and safety

- All licensed activities continued to be carried out safely and securely.
- In 2019, the HWPMO SSHC increased its focus on the importance of mental health awareness and implementation of mental health initiatives in addition to the committee's core regulatory activities. The SSHC initiated various sub-committees focused on mental and physical health including campaigns to encourage employee awareness and participation in physical and mental health promotion activities. The SSHC also implemented initiatives to improve emergency preparedness and emergency preparedness kits; increase messaging on flora and fauna field safety awareness (e.g., tick control and prevention; avoidance of poisonous plants); increase messaging on field temperature awareness (e.g., heat stress); and promote office electronics safety.

Environmental protection

- Environmental protection and mitigation continues to be effective; changes from the baseline are minimal and generally within the EA predictions. EA follow-up and operational monitoring continued in 2019 with no areas of concern.
- Innovative efforts to support continuous improvement of air quality monitoring were implemented through the installation of High volume (Hi-Vol) air samplers at two locations in Port Granby in 2019 (Port Granby South and Port Granby East). The Hi-Vol samplers were set to operate for an approximate 24 hour period with the sampling media (filters) changed on a daily schedule. Mini-Vol portable air samplers were deployed at the Port Granby Northwest location as an alternative to high volume air samplers due to the lack of a power source at that location.
- Real-time dust monitoring results from the Independent Dust Monitoring Program for the PG LTWMF construction continue to be available at www.phai.ca. Weekly reports include daily real time dust measurements and a site map illustrating the locations of the independent real time dust monitors.

Emergency management and fire protection

- In 2019, CNL hosted and participated in several interactions with front line responders and local emergency authorities to support of collaboration and response readiness associated with the PGP. These interactions included site familiarization, training, and CNL's participation as a supporting observer in local emergency preparedness exercises hosted by the municipality.
- In 2019 March, an emergency tabletop drill was completed to test the Environmental Emergency Plan (E2 Plan) for propane releases at PG WWTP. The drill included a walk-through of a pre-determined scenario involving propane stored on site. All general annual fire alarm drills and evacuations were conducted.

Waste management

- The PG WWTP continued to operate in conformance with the *Licence Conditions Handbook* [2].
- CNL continued operations at the PG LTWMF in accordance with the parameters of the CNSC licence [1].
- A new residual process was added to the plant operation in the fall of 2019. The process generated approximately 1,512 cubic meter of cemented brine waste. This process consisted of adding a mixture of aggregate and Portland cement to the saline brine containing soluble salts and trace radiological contaminants, and packaging the product in a cubic metre totes for disposal in the PG LTWMF.

Security

- In 2019, updates were made to physical security features of the PG WWTP.

Safeguards and Non-Proliferation

- As per the *Licence Conditions Handbook* [2], the Safeguards and Non-Proliferation Program is not applicable to the Port Granby Project.

Packaging and transport

- The PHAI Transportation of Dangerous Goods Program continued to operate the safe off-site transport and shipment of dangerous goods by conforming to all applicable laws and regulations, as well as company policies and procedures.
- In 2019, there were nine (9) shipments of dangerous goods from the Port Granby site to offsite facilities, and many shipments of dangerous goods were received at the site from offsite vendors (consumable chemicals, diesel fuel, and propane).

Other Matters of Regulatory Interest

- Public consultation and stakeholder relations activities continued to be conducted in accordance with the PHAI Public Information Program.
- CNL maintained effective relationships with the local community and First Nations through its many outreach and stakeholder relations activities, in accordance with the PHAI Public Information Program.
- CNL engaged approximately 1,105 people about the PHAI through presentations and tours of the project sites.

CNL is committed to achieving high standards of operational safety and security. The information and data presented in the report support the conclusion that safe and secure performance is being achieved at the Port Granby Long Term Low Level Radioactive Waste Management Project (PG LTLLRWM) site, while enhancements are being implemented to further improve results.