

PORT HOPE PROJECT 2019 ANNUAL COMPLIANCE REPORT EXECUTIVE SUMMARY

This annual compliance monitoring report for the 2019 calendar year has been prepared as per licence condition 2.3 of the Port Hope Long-Term Low-Level Radioactive Waste Management Project Licence WNSL-W1-2310.01/2022 [1] and Section 3.2.3 (e.) of the Port Hope Licence Conditions Handbook [2] as a summary report of annual compliance monitoring and operational performance.

The Port Hope 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*, 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* [3], 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 the Licence Conditions Handbook under section 3.2.3.
- SAI Global 12 Month Surveillance Audit conducted an ISO 9001:2015 audit on the Port Hope 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 PH Waste Water Treatment Plant (WWTP) Operations Supervisor position and the PH WWTP Operations Technician position.

Facility and Equipment

- *PH LTWMF*: Phase 2 project activities associated with the Long-Term Waste Management Facility (LTWMF), located at the site of the former Welcome Waste Management Facility (WWMF) and adjacent lands, include construction of an engineered aboveground mound and associated infrastructure and support facilities. In 2019 work continued to support construction of temporary on-site infrastructure and support facilities including Cell 2a and 2b construction and a base-liner system for the mound; completion of placement of waste from the WWMF into the LTWMF, continued placement of waste from other Port Hope clean sites into the LTWMF and preparation of cover liner system and closure of mound.
- *Small Scale Sites*: characterization and design of properties and roads continued throughout 2019; progress included work to confirm 4652 properties with external lots have been characterized and 997 have been identified with LLRW; 4400 properties with interior spaces have been characterized and 196 have been identified with LLRW.
- *Historic Properties*: In 2019, 40 exterior and 8 interior historic LLRW remediations were completed.
- *Temporary Storage Sites (TSS)*: Project activities at the TSS included remediation of 1 site in 2019 and the transportation of the LLRW to the LTWMF for storage.
- *Waterfront Area*: In 2019, the Center Pier was turned over to CNL after Cameco demolished the existing structures and transported the debris to the LTWMF. Preparation of the site to support harbour dredging activities began in April 2019 and continued for the duration of the fiscal year. In November 2019, work began on removing large underwater debris (obstructions) from the harbour floor.
- *Highland Drive Area*: Design work is progressing for the remediation of the Pine St. North Consolidation site. CNL continued to maintain, monitor and inspect the Pine Street North Extension CS and Strachan Street Ravine CS as per WNSL 344 [3].
- *Industrial Sites*: ESA Phase 1 and initial Phase 2 ESA drilling was conducted at Centre Pier, Lions Park and Coal Gasification Plant, for Data Gap/additional delineation work.; a preliminary PCB investigation at the Chemetron Lagoon was initiated; remediation of the STPSC was completed resulting in the transfer and disposal of 12,000 m³ of uranium impacted soil to the PH LTWMF.
- *PH WWTP*: The new WWTP continued operation on a fulltime basis throughout 2019.

Safety analysis

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

Physical Design

- In 2019, approved action levels [1] have been implemented at the PH WWTP and updated in the PHP Quarterly Effluent Reports.

- In an effort to improve operation of the facility, CNL utilized CRL Design Engineering to implement fixes and upgrades to existing equipment following CNL's Engineering Change Control process.

Fitness for service

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

Radiation protection

- Radiation Protection doses for workers remain As Low As Reasonably Achievable (ALARA) and doses for public remain low.
- Radiation exposures for workers and public were below all regulatory dose limits.

Conventional health and safety

- All licensed activities continued to be carried out safely and securely.
- There were no lost time injuries in 2019.
- 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.
- 2019 sampling results for fourteen on-site PW LTWMF observation wells were consistent with historical data.
- In 2019 November, CNL voluntarily sampled domestic wells on twelve residential properties near the WWMF and analysed the samples for arsenic, radium-226, uranium and nitrate concentrations as well as for pH. Residents will be notified in writing about the results. The results are currently under review.

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 PHP. These interactions included site familiarization, training, and

CNL's participation in local emergency preparedness exercises hosted by the municipality as a supporting observer.

- Several fire screening assessments were completed for various maintenance and capital improvement projects in accordance with CNL's Engineering Change Control (ECC) program.

Waste management

- The Port Hope Waste Water Treatment Plant (PH WWTP) continued to operate in conformance with the Licence Conditions Handbook [2]. No release limits were exceeded and the effluent was found not to be toxic.
- CNL continued operations at the PH LTWMF in accordance with the parameters of the CNSC licence [1].
- On-site waste movement occurred from 2019 January 01 to 2019 December 31. Off-site waste deliveries to the PH LTWMF from various sites which included Cameco, Temporary Storage Sites (TSS), Small-Scale Sites (SSS) and the Construction Monitoring Program (CMP), and other waste sources such as on-site waste transfers are listed in the table below.

Security

- There were no security events that affected the PHP.

Safeguards and Non-Proliferation

- The PH LTWMF received and placed approximately 700 metric tonnes of safeguarded materials from Cameco in accordance with the requirements of CNL's NM&SM program.
- The IAEA conducted various types of activities as part of the safeguards approach for CNL's material balance areas CNFN and CN2-, including, implementation and/or maintenance of IAEA safeguards monitoring equipment, and three (3) technical on-site visits.

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.

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 1,922 people about the PHAI through 64 presentations, tours and participation at local events in the community.

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 Hope Long-Term Low-Level Radioactive Waste Management Project (PH LTLRWM) site, while enhancements are being implemented to further improve results.