

Summary of Annual Compliance Monitoring Report: Calendar Year 2019

This annual compliance monitoring report for the 2019 calendar year has been prepared as per licence condition 3.2 of the Whiteshell Laboratories (WL) Licence NRTEDL-W5-8.00/2024 and CNSC REGDOC-3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills* as a summary report of annual compliance monitoring and operational performance.

This annual compliance report provides Canadian Nuclear Laboratories (CNL) 2019 performance data for WL and is organized by 14 Safety and Control Areas (SCAs)¹, as well as a report on each of the WL nuclear and non-nuclear facilities.

The following provides overall performance highlights for 2019 activities:

- There were no serious process failures at WL.
- All licensed activities continued to be carried out safely and securely.
- No member of the public received a radiation dose that exceeded any regulatory limit.
- No worker at WL received a dose in excess of any of the respective radiation dose limits for radiation workers, as defined in the Radiation Protection Regulations.
- All releases of radioactive material in WL effluents during 2019 were below their respective derived release limits.
- Significant progress was made on decommissioning of Building 200, the former Active Liquid Waste Treatment Centre.
- The RD-14M (Building 300, Stage 6) and Large-Scale Vented Combustion test facilities were decommissioned and demolished.
- The WL site licence was successfully renewed for five years, effective 2020 January 01.

Below is a summary of the annual compliance report for calendar year 2019.

- **SCA - Management System:** WL has continued its focus on implementation of the corporate management system, as well as the WL Quality Assurance program for decommissioning, based on Canadian Standards Association (CSA) N286.6 and aligned with CSA N286-12, monitored through many means including audits, inspections, self-assessments and program/management system reviews.
- **SCA - Human Performance Management:** WL initiated a “Pay it Forward Parking” initiative to recognize the outstanding work that goes on in the workplace, promoting CNL’s Safety Culture and use of Event Free Tools, and recognizing those who go above and beyond their normal duties.

¹ The CNSC evaluates how well licensees meet regulatory requirements and CNSC expectations for the performance of programs in 14 safety and control areas.

- **SCA - Operating Performance:** WL decommissions and operates its facilities according to prescribed programs and procedures, and monitors safety performance in the operational area through the concept of “events”. The total number of internal event reports raised continues to show a strong reporting culture. There was one Canadian Nuclear Safety Commission (CNSC) reportable event.
- **SCA - Safety Analysis:** Effective Safety Analysis Reports and Facility Authorizations continue to be in place for WL’s nuclear facilities, helping meet health, safety, security, environmental and regulatory requirements.
- **SCA - Physical Design:** The Certificate of Authorization was renewed with Engineers Geoscientists Manitoba, authorizing CNL to engage in the practice of professional engineering in Manitoba.
- **SCA - Fitness for Service:** The Periodic Inspection Plan (PIP), previously developed to confirm the ongoing fitness-for-service of the concrete storage facilities at the Waste Management Area (WMA), continued implementation with no significant issues identified. The PIP was revised to address some changes. Regular preventative or corrective maintenance and testing of WL’s safety-related systems were carried out to ensure the systems were fit-for-service.
- **SCA - Radiation Protection:** No worker received a whole-body dose (including committed) in excess of any of the respective dose limits for radiation workers as defined in the Radiation Protection Regulations, and average individual doses remain a small fraction of these limits. Maximum dose to a person working at WL was 3.1 mSv and collective doses remained below 50 person-mSv (49.6 person-mSv) for 2019. Members of the public received no measureable radiation doses. The Controlled Area reduction initiative was completed for the WL site north side.
- **SCA - Conventional Health and Safety:** Implementation of CNL’s Occupational Safety and Health program at WL continues to drive improvements in safety and safety culture, resulting in no lost time injuries in 2019.
- **SCA - Environmental Protection:** The results of the radiological and non-radiological effluent monitoring program demonstrate that controls for the release of potentially hazardous substances currently in place at WL continue to provide substantial protection of the environment. Radiological emissions were 0.00023% of the Derived Release Limit (DRL) for air emissions and 0.93% of the DRL for liquids. The monitoring program confirms that the WL site is operating in a manner that protects workers, the public, and the environment. WL maintained their ISO-14001 registration, and are compliant to a number of CSA environmental standards.
- **SCA - Emergency Management and Fire Protection:** The Emergency Management program at WL was focussed on supporting the establishment of a Tiered Response Force (TRF). For the Fire Protection program, a fire response needs analysis was completed.
- **SCA - Waste Management:** WL continued to reuse or recycle as much material as was practicable. Radioactive, clearable and hazardous wastes were generated from both ongoing operational activities and decommissioning projects, including disposition of

1,511 m³ of radioactive waste to CRL, and 410 m³ (804,170 kg) of recycled waste shipped off-site.

- **SCA – Security:** The Security Program at WL supports the CNL Corporate Security mandate and addresses the regulatory requirements for security. Nuclear Security Officers assigned regular duties continued to meet the physical and psychological fitness requirements for Security Officers as required by the CNSC. As a result of a CNSC Order, an implementation plan addressing the Order was accepted by the CNSC, and includes the standing up of a Tiered Response Force, for which training has commenced. A “Force-on-Force” security training exercise under direct CNSC Staff observation was successfully completed.
- **SCA - Safeguards:** There were no issues identified with International Atomic Energy Agency (IAEA) Safeguards inspections conducted at WL. One internal verification inspection was conducted with no recordable findings.
- **SCA - Packaging and Transport:** There was approximately 1,483 m³ of low-level waste and 28 m³ of intermediate-level waste safely shipped to Chalk River Laboratories (CRL).
- **Other matters of regulatory interest:** Two meetings of the WL Public Liaison Committee took place, an Open House was held attracting approximately 300 visitors, and numerous public information sessions and Indigenous engagements were held on the Whiteshell Reactor 1 (WR-1) in-situ decommissioning and overall activities of the WL Closure Project. A traditional Indigenous ceremony with Sagkeeng First Nation and Turtle Lodge was held on site.
- **Facilities** (operating nuclear facilities, permanently shutdown facilities, facilities being decommissioned and the non-nuclear facilities): All the licensed activities in these facilities continue to be carried out safely and securely with acceptable radiation doses to personnel and releases to the environment. The following notable facility-specific activities took place: significant progress in decommissioning the Active Liquid Waste Treatment Centre, Building 200; two significant former experimental facilities, RD-14M and the Large-Scale Vented Combustion Test Facility, were decommissioned and demolished; at the Waste Management Area (WMA) the old Protected Area fence that enclosed the standpipes area alone was removed, and the Soil Storage Compound was emptied of stored soil bags, with the waste packaged and shipped off site; and commenced decommissioning of the Containment Test Facility (B303) and Waste Clearance Facility (B304).

CNL is committed to achieving high standards of operational safety and security. The information and data presented in this report support the conclusion that safe and secure performance is being achieved at the WL site, while enhancements are being implemented to further improve results.