

CMD 26-H105 – CNSC Staff Submission

Application to Renew the CNSC Licence for Orano’s McClean Lake Operation for a 2-Year Term

Classification	UNCLASSIFIED
CMD Type	Original
CMD Number	26-H105
Reference CMD(s)	17-H9, 18-H104, 21-H6
Type of Licensing CMD	A Licence Renewal
Hearing	Hearing in writing based solely on written submission
Date of Hearing	September 2026
SharePoint Links	CMD 26-H105 - Application to Renew the CNSC Licence for Orano's McClean Lake Operation for a 2-Year Term.docx
Summary	This CMD presents information about the following matters of regulatory interest with respect to Orano Canada Inc.’s McClean Lake Operation: • CNSC staff’s review and assessment of Orano’s application for, and recommendation regarding, the renewal of uranium mine and mill licence: ◦ UML-MINEMILL-McCLEAN.02/2027 • Revision of the financial guarantee. CNSC staff recommend that the Commission: • Renew the uranium mine and mill licence to authorize Orano to operate McClean Lake Operation until June 30, 2029 • Accept the proposed revised financial guarantee amount for Orano’s McClean Lake Operation for decommissioning. • Authorize the delegation of authority as set out in this CMD The following items are attached: • Current licence UML-MINEMILL-McCLEAN.02/2027 • Proposed licence changes • Proposed licence UML-MINEMILL-McCLEAN.00/2029 • Proposed licence conditions handbook, Revision 7



CMD 26-H105 – Mémoire du personnel de la CCSN

Demande de renouvellement du permis de l'établissement minier de McClean Lake d'Orano pour une période de 2 ans

Classification	NON CLASSIFIÉ
Type de CMD	Version initiale
Numéro de CMD	26-H105
CMD(s) de référence	17-H9, 18-H104, 21-H6
Type de CMD relatif à une décision de permis	Renouvellement d'un permis
Audience	Audience par écrit fondée uniquement sur des mémoires
Date de l'audience	Septembre 2026
Liens SharePoint	CMD 26-H105 - Application to Renew the CNSC Licence for Orano's McClean Lake Operation for a 2-Year Term.docx
Sommaire	Le présent CMD fournit de l'information sur les questions d'ordre réglementaire suivantes concernant l'établissement minier de McClean Lake appartenant à Orano Canada Inc.: • Examen et évaluation par le personnel de la CCSN de la demande d'Orano pour le renouvellement du permis d'exploitation d'une mine et usine d'uranium : ○ UML-MINEMILL-McCLEAN.02/2027 • Révision de la garantie financière Le personnel de la CCSN recommande à la Commission : • Renouveler le permis d'exploitation d'une mine et usine d'uranium pour autoriser Orano à exploiter l'établissement minier de McClean Lake jusqu'au 30 juin 2029 • Accepter le montant proposé de la garantie financière révisée pour le déclassement de l'établissement minier de McClean Lake d'Orano • Autoriser la délégation de pouvoirs prévue dans le présent CMD



Les pièces suivantes sont jointes :

- Permis actuel UML-MINEMILL-McCLEAN.02/2027
- Modifications proposées au permis
- Permis proposé UML-MINEMILL-McCLEAN.00/2029
- Manuel des conditions de permis proposé, révision 7.



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada
UNCLASSIFIED

CMD 26-H105

**Application to Renew the CNSC Licence for Orano's
McClean Lake Operation for a 2-Year Term**

2026-06-26

Signed by:

X

**Greencorn,
Nancy**



Digitally signed by Greencorn, Nancy
DN: C=CA, O=GC, OU=CNSC-CCSN, CN="Greencorn,
Nancy"
Reason: I am the author of this document
Location:
Date: 2026.06.26 15:46:22-04'00'
Foxit PDF Editor Version: 13.2.1

Nancy Greencorn
Acting Director General, DNCFR

Table of contents

Land acknowledgement.....	1
Plain Language Summary	1
1 Overview	4
1.1 Background.....	4
1.2 Highlights.....	11
1.3 Overall conclusions	13
1.4 Overall recommendations.....	13
2 Environmental protection review	13
3 General assessment of SCAs	14
3.1 Management System	15
3.2 Human Performance Management	19
3.3 Operating Performance.....	22
3.4 Safety Analysis.....	25
3.5 Physical Design	29
3.6 Fitness for Service	35
3.7 Radiation Protection	38
3.8 Conventional Health and Safety.....	45
3.9 Environmental Protection	52
3.10 Emergency Management and Fire Protection	69
3.11 Waste Management.....	73
3.12 Security.....	79
3.13 Safeguards and Non-Proliferation.....	82
3.14 Packaging and Transport.....	85
4 Consultation and engagement.....	88
4.1 Indigenous consultation and engagement.....	88
4.2 Public consultation and engagement.....	92
4.3 Licensee public information and engagement.....	92
4.4 Participant funding program	94

5	Events and other matters of regulatory interest	95
5.1	Cost recovery.....	95
5.2	Financial guarantees	95
5.3	Improvement plan and significant future activities	97
5.4	Nuclear liability insurance	98
5.5	Delegation of authority	99
6	Overall Conclusions and Recommendations	100
	References	101
	APPENDIX A : Basis for the Recommendation(s).....	106
	A1 : Regulatory Basis	106
	A2 : Detailed Summary of CNSC Assessment of Application	122
	A3 : Technical Basis	127
	A4 : Specific Areas for this Facility Type.....	130
	APPENDIX B : Indigenous Nations, communities and organizations that have traditional and/or treaty territories and/or interests within proximity to the licensed facilities.....	132
	APPENDIX C : Proposed Licence Changes.....	133
	Overview	133
	Licence Conditions	133
	Licence Format	133
	Licence Period	133
	Current Licence	134
	Proposed Licence	142
	Draft Licence Conditions Handbook.....	149

Land acknowledgement

The Canadian Nuclear Safety Commission (CNSC) staff would like to acknowledge that the McClean Lake Operation (MLO) is situated within historic Treaty 10 (1906) and the Homeland of the Métis and is within the traditional territories of the Dene, Cree, and Métis peoples.

Plain Language Summary

In accordance with section 24 of the *Nuclear Safety and Control Act* ([NSCA](#)), Orano Canada Inc. (Orano) applied to the CNSC for renewal of the uranium mine/mill licence for the MLO for a 2-year term, with a proposed expiry of June 30, 2029 [1]. Orano is seeking authorization for the continued operation and modification of a nuclear facility; the mining of uranium and the production of uranium concentrate; and the possession, storage, transfer, importation, use and disposal of nuclear substances and radiation devices. Orano is requesting a 2-year licence period with no changes to the current licensing basis, authorized activities, licence periods and conditions, or the associated Licence Conditions Handbook (LCH).

Orano has applied for a short-term renewal as it intends to add new mining activities in a future application for an extended licence period and licence amendment or licence to prepare, construct and operate, i.e., Midwest and Sue F (formerly known as Caribou Project¹) Projects. Both mining projects are established within the MLO licensing basis and have previously approved Environmental Assessments for open pit mines. As part of a future application, Orano has indicated that they intend to submit a revised project description for a change in the mining method from the open pit mining to the Surface Access Borehole Resource Extraction (SABRE) mining method. Orano is currently using SABRE to mine the McClean Lake pods (small ore deposits) on the west side of the mill and across from the McClean's gate office.

During the licensing period (July 2017 – September 2025), CNSC staff conducted 39 compliance inspections of various aspects of the mill and surface facilities. The licensee addressed all non-compliances and recommendations arising from these compliance

¹ Sue F is on the existing McClean Lake site, while Midwest is roughly 15 km west of McClean Lake. Limited care and maintenance activities at Midwest and Sue F are already established within the McClean Lake licensing basis. Both have approved Environmental Assessments for open pit mines.

inspections in a satisfactory and timely manner. CNSC staff's compliance activities verified that the MLO operated safely and Orano made adequate provision for the protection of the environment, the health and safety of persons, and the maintenance of national security and measures required to implement Canada's international obligations.

In January 2025, Orano submitted an updated draft preliminary decommissioning plan (PDP) and financial assurance (FA) following a 5-year cycle requirement. The PDP and FA were submitted in accordance with CNSC licence conditions G.3 and 11.2 requiring the MLO to maintain a PDP and financial guarantee, respectively, for decommissioning of the facility. CNSC staff reviewed Orano's PDP and financial guarantee in accordance with CSA standard N294-19, *Decommissioning of Facilities Containing Nuclear Substances*, and CNSC Regulatory Guides, CNSC [REGDOC 3.3.1, Financial Guarantees for the Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#), and [REGDOC 2.11.2 Decommissioning](#). CNSC staff determined that the proposed cost estimate of C\$122,557,378 is credible for decommissioning the McClean Lake site. This is an increase of approximately C\$20.5M from Orano's previous cost estimate of C\$102,098,000. The cost estimate differs from the previous estimate due to the revision of rates for materials, equipment, labour, and added costs to decommission the expanded JEB Tailings Management Facility (TMF). CNSC staff concluded that the updated draft PDP and financial guarantee meet CNSC regulatory requirements. Only a redacted copy of the PDP and FA is publicly available [2] after the Commission deemed it confidential as per the CNSC's Rules of Procedure [3].

An environmental protection review under the *Nuclear Safety and Control Act* (NSCA) was conducted by CNSC staff for Orano's MLO licence renewal. CNSC staff concluded that Orano has made and will continue to make adequate provision for the protection of the environment and the health and safety of persons.

This Commission member document (CMD) presents CNSC staff's assessment, conclusions and recommendations in respect of Orano's licence renewal application. CNSC staff have evaluated the licensee's compliance with the requirements of the [NSCA](#), the [Uranium Mines and Mills Regulations](#) and other applicable regulations. After assessing the licensee's regulatory performance, CNSC staff concluded that environmental and radiological risks remain low. Effluent quality and radiation doses are effectively controlled and kept well below regulatory limits. Cases where licensed release limits were exceeded are explained in Section 3.9. The licensee's performance in conventional health and safety also demonstrates that risks to workers are managed and activities are conducted safely.

CNSC staff will continue to report to the Commission on Orano's regulatory compliance performance at public proceedings. CNSC staff will ensure through their regulatory oversight that Orano maintains safe operations at the MLO and upholds its commitments to transparency, public outreach, and community engagement.

CNSC staff therefore recommend that the Commission take the following actions:

1. **Renew** the proposed uranium mine and mill licence for the McClean Lake Operation UML-MINEMILL-McClean.00/2029.
2. **Accept** the proposed revised financial guarantee amount of C\$122,557,378 for Orano's McClean Lake Operation for decommissioning.
3. **Delegate** authority as set out in section 5.5 of this CMD.

Referenced documents in this CMD are available to the public upon request, subject to confidentiality considerations.

1 Overview

1.1 Background

Orano Canada Inc. (Orano) is the operator of the McClean Lake Operation (MLO). Ownership of the MLO is comprised of Orano (77.5%), and Denison Mines Inc. (22.5%). Orano has been issued a licence for the MLO by the Canadian Nuclear Safety Commission (CNSC) under section 24 of the Nuclear Safety and Control Act (NSCA) and is authorized to conduct licensed activities, including:

- processing of Cameco Corporation's Cigar Lake mine high-grade ore slurry
- operation and modification of a nuclear facility for the mining of uranium ore
- production of uranium concentrate
- operation of the JEB Tailings Management Facility (TMF)
- care and maintenance of Midwest Project site

Orano is the majority owner and operator of the Midwest Project, a known uranium deposit. The site continues to be maintained in a care and maintenance state. In 2009, the Commission revoked the Midwest Project care and maintenance licence and consolidated into the current McClean Lake licence.

Construction of MLO began in 1994. In 1996, an operating licence was first issued to Orano (formerly COGEMA Resources Inc., and then AREVA Resources Canada) for the MLO by the Atomic Energy Control Board (AECB), predecessor of the CNSC. Since then, the CNSC licence issued to Orano has undergone several renewals. The current operating licence was renewed by the Commission on July 1, 2017, for a 10-year term with an expiry date of June 30, 2027 [4]. In July 2018, the Commission approved the licensee's name change from AREVA Resources Canada Inc. to Orano Canada Inc. Following a public hearing on October 4, 2021, the Commission amended the MLO licence to allow the JEB TMF expansion [5].

Mining and milling operations of uranium ore from 5 open-pit mines were completed in 2008. Orano developed a new mining method called Surface Access Borehole Resource Extraction (SABRE), which is suitable to mine small ore deposits. In 2021, Orano carried out test mining activities on the McClean Lake pods (small ore deposits) using SABRE technology located on the west side of the mill, followed by limited production in 2025.

1.1.1 McClean Lake location and layout

The MLO is a uranium mine and mill facility located approximately 750 kilometres north of Saskatoon in the Athabasca Basin area of northern Saskatchewan. The MLO includes the JEB milling area, Sue mining area, JEB TMF, McClean Lake pods (small ore deposits), and the undeveloped Midwest and Sue F ore deposits. Access to the site is by an all-weather road that connects with the provincial highway system (Highway 905) with an access road to the combined Sue and JEB sites and a dedicated access road to the Midwest Project site. Workers commute to and from the site by aircraft landing at Points North, a private airstrip, and continue by bus to the MLO. The nearest permanent communities are Wollaston Post and the Wollaston Lake Indian Reserve (Hatchet Lake), located approximately 50 kilometres by air from the mine to the southeast on the far shore of Wollaston Lake.

A map displaying the MLO along with the nearest communities is shown in Figure 1.1 McClean Lake – location and nearest communities (Source: Orano).

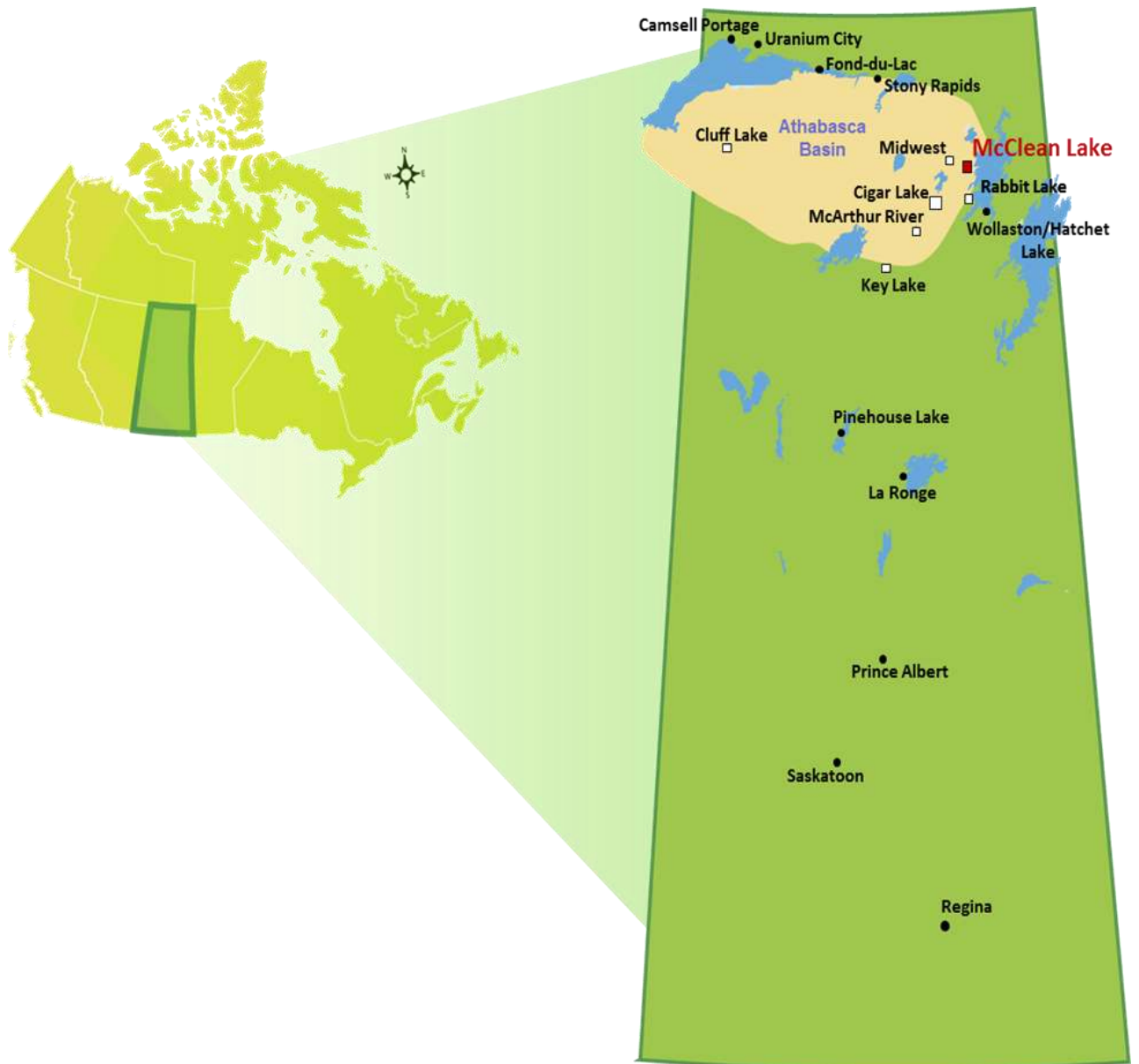


Figure 1.1 McClean Lake – location and nearest communities (Source: Orano)

High grade ore slurry from Cameco's Cigar Lake mine is transported to the MLO in the Type IP-2² rated containers and unloaded into the slurry receiving area. The purpose-built haul road between Cigar and McClean spans 52 km. The McClean Lake mill uses sulphuric acid and hydrogen peroxide leaching and a solvent extraction recovery process

² A type of industrial package ('IP') designed in accordance with the applicable requirements of the IAEA regulations. These Type IP-2 packages refer to slurry totes used to transport/receive ore slurry.

to extract and recover uranium product from ore slurry received from the Cigar Lake mine.

The main components of the mill processing circuits are slurry receiving, grinding, leaching, counter current decantation (CCD), clarification, solvent extraction (SX), yellowcake preparation, tailings preparation, calcining and packaging.

The JEB site at MLO includes an ammonia sulphate crystallization plant, sulphuric acid plant, oxygen plant, ore storage areas, tailings management facilities, JEB water treatment plant (WTP), sink/vulture treated effluent management system, warehouses, worker camp and office. The Sue site at MLO includes waste rock, special waste rock storage facilities, ore transfer pad, Sue WTP, pre-sedimentation and monitoring ponds, a 5-bay equipment maintenance shop complete with wash bay facilities and a flooded Sue C/A pit which is used to deposit chemically and radiologically materials. The waste management facilities are discussed in more detail in section 3.11. Figure 1.2 presents an aerial view of the MLO.

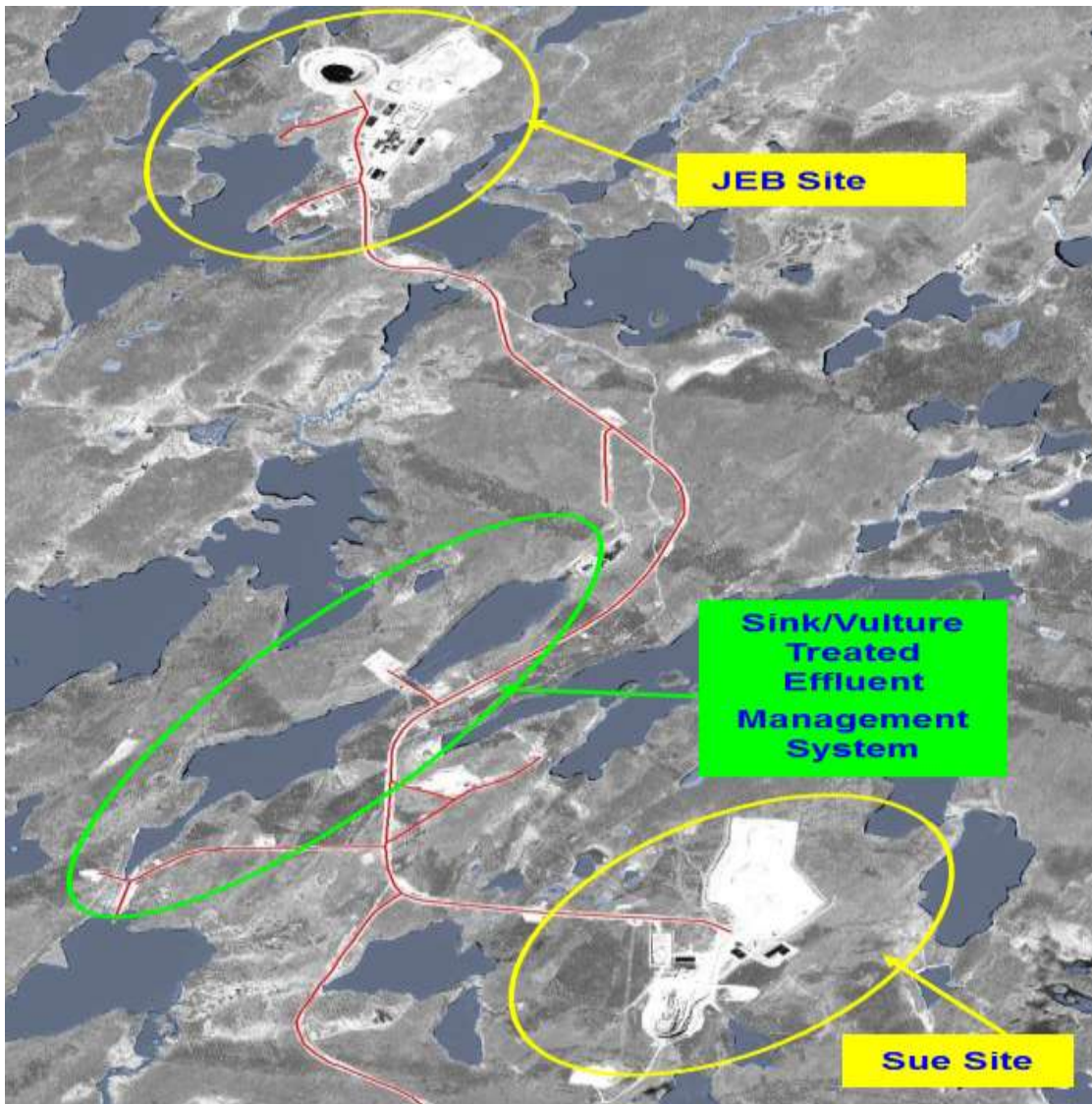


Figure 1.2 McClean Lake – aerial view of the JEB and Sue sites (Source: Orano)

Mining and milling of uranium ore from 5 open-pit mines is complete and conventional mining has not been carried out at the MLO since 2008. In 2021, the SABRE program was successfully completed during a test mining session, followed by limited production in 2025. Table 1.1 presents mining data for the MLO during the current licensing period (2017 to 2025).

Table 1.1: Mining production data, 2017-2025

	2017	2018	2019	2020	2021	2022	2023	2024	2025*
Ore tonnage (Mkg/year)	N/A	N/A	N/A	N/A	1.21	N/A	N/A	N/A	3.37
Average ore grade mined (% U)	N/A	N/A	N/A	N/A	5.66	N/A	N/A	N/A	6.75
Uranium mined (Mkg U/year)	N/A	N/A	N/A	N/A	0.058	N/A	N/A	N/A	0.227

*The 2025 reporting period is January 1, 2025, to September 30, 2025.

N/A = not applicable

Orano is authorized to process ore from the Cigar Lake Operation at the MLO, with a nominal annual production of 10.9 Mkg of uranium. Table 1.2 outlines milling production data for the MLO, during the current licensing period (2017 to 2025).

Table 1.2: Milling production data, 2017-2025

	2017	2018	2019	2020	2021	2022	2023	2024	2025*
Mill ore feed (Mkg/year)	36.4	42.9	46.2	26.3	35.2	52.3	49.6	54.5	39.1
Average annual mill feed grade (% U)	19.3	16.3	15.2	14.6	13.8	13.5	11.9	12.1	13.6
Percentage of uranium recovery (%)	99.0	98.9	98.9	98.8	98.7	98.9	98.9	98.8	99.1
Uranium concentrate produced (Mkg U/year)	6.9	6.9	6.9	3.9	4.8	6.9	5.8	6.5	5.5
Authorized annual production (Mkg U/year)	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9

*The 2025 reporting period is January 1, 2025, to September 30, 2025.

The MLO is regulated at both the provincial and federal levels. At the provincial level, the [Saskatchewan Ministry of Environment](#) (SMOE) issues an Approval to Operate a Pollutant Control Facility. Both SMOE and the [Saskatchewan Ministry of Labour Relations and Workplace Safety](#) conduct inspections of the MLO. At the federal level, the CNSC, [Environment and Climate Change Canada](#), and [Employment and Social Development Canada](#) regulate uranium mines and mills. In addition, under the [Nuclear Safety and Control Act](#) (NSCA), uranium mines and mills are required to have a CNSC licence. The CNSC-authorized activities at the MLO are described within the CNSC issued Licence Conditions Handbook (LCH).

1.1.2 Amendments during current licence period

On February 15, 2018, the CNSC received notification that, under section 178 of the [Canada Business Corporations Act](#), AREVA Resources Canada Inc.(AREVA) amended its corporate name to Orano Canada Inc. The official name change became effective February 7, 2018. AREVA provided copies of the Certificate of Amendment confirming the corporation number had not changed and that it was only a name change. In July 2018, the Commission approved the change of the licensee's name from AREVA Resources Canada Inc. to Orano Canada Inc. and issued the amended licence UMOL-MINEMILL-McCLEAN.01/2027.

On June 16, 2020, Orano applied to the Canadian Nuclear Safety Commission (CNSC) to amend its Uranium Mine and Mill Operating Licence (UMOL-MINEMILL-McCLEAN.01/2027) to allow for the expansion of the JEB Tailings Management Facility (TMF) at the McClean Lake Operation (MLO). At the time, the approved maximum elevation of the JEB TMF was 457.5 metres above sea level (mASL), with consolidated tailings permitted up to 448 mASL. The proposed expansion would raise the TMF height to 468 mASL and increase the allowable elevation of consolidated tailings to 462 mASL. On October 4, 2021, the Commission approved the expansion and issued an amended licence (UMOL-MINEMILL-McCLEAN.02/2027).

1.2 Highlights

Orano's application for licence renewal

The current CNSC licence for the MLO expires on June 30, 2027. On August 11, 2025, Orano applied for renewal of the CNSC-issued licence for the MLO for a 2-year term with proposed expiry of June 30, 2029. The MLO has been licensed for over 2 decades by the CNSC/AECB. The operation is currently in good standing, rated Satisfactory in all SCAs, with mature programs and an experienced workforce in place. The short-term renewal with no changes to the licensing basis will give Orano sufficient time to provide to the CNSC a subsequent comprehensive application including the development of Midwest and Sue F mining projects, and proposal of a longer licence period. The proposed mining and milling operations at the MLO are within the authorized production limits. CNSC staff assessed all aspects of Orano's application for the renewal of CNSC-issued licence for the MLO.

CNSC staff assessment of Orano's application

CNSC staff assessed Orano's licence renewal application for its operation at the MLO. This assessment considered Orano's submissions, and aims to provide a recommendation to the Commission, to assist in its determination, under subsection

24(4) of the NSCA, of whether Orano remains qualified to perform the activities to be authorized by the Commission and, in so doing, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

The environmental monitoring results from Orano's MLO are outlined in Volume 1 of the Environmental Performance Technical Information Document (EP TID) [6]. These results, along with projections of future performance, are integrated into assessments of potential future environmental risks and detailed in Volume 2 of the MLO EP TID – Environmental Risk Assessment [7]. TIDs are submitted to the CNSC and SMOE following a 5-year review cycle. In the 2017 Record of Decision, the Commission advised Orano and CNSC staff to align future environmental reviews and analysis with the 10-year licence period [4]. On July 7, 2020, following direction from the Commission, Orano submitted a request to the CNSC to defer updates to Volumes 1 and 2 of EP TID until 2025. The CNSC accepted this request on August 12, 2020.

In December 2025, Orano submitted updated EP TID Volumes 1 and 2 which include environmental monitoring data and environmental risk assessment information on the impacts current and future licensed activities may have on the environment. CNSC staff finished their review of these two submissions in April 2026, and comments were provided to Orano.

Based on continued monitoring and assessments of Orano's compliance performance at the MLO, CNSC staff confirmed that Orano has continued to improve the management and safety performance of the facility. CNSC staff rated Orano's performance at the MLO site for all 14 safety and control areas (SCAs) as "satisfactory" throughout the licensing term.

Preliminary Decommissioning Plan and Financial Guarantee

In January 2025, Orano submitted a revised preliminary decommissioning plan (PDP) and cost estimate for the MLO following the 5-year cycle requirement. CNSC staff concluded the revised PDP, including cost estimates for the financial guarantee, meet the criteria of CSA standard N294-19, *Decommissioning of Facilities Containing Nuclear Substances*, and CNSC Regulatory Guides, CNSC [REGDOC 3.3.1, Financial Guarantees for the Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#), and [REGDOC 2.11.2 Decommissioning](#). CNSC staff recommend that the Commission accept Orano's proposed financial guarantee in the amount of C\$122,557,378 for the MLO. This represents approximately a \$20.5 million increase from Orano's previous cost estimate of \$102,098,000. The revised estimate reflects updated rates for materials, equipment, and labor, as well as additional costs associated with decommissioning the expanded JEB TMF. The SMOE, beneficiary of the financial guarantee, is solely responsible for

any associated work and has accepted this proposed amount. The decommissioning plans and financial guarantee are discussed in detail in subsections 3.11.2 and 5.2.1, respectively.

1.3 Overall conclusions

CNSC staff's assessment concluded that the licensee's performance during the licensing term (July 1, 2017, to September 30, 2025) was satisfactory and met regulatory requirements. CNSC staff's conclusions have informed its recommendation that Orano is qualified to carry on the licensed activities, and in so doing, will make adequate provision for the protection of the environment, the health and safety of persons, and the maintenance of national security and measures required to implement Canada's international obligations.

1.4 Overall recommendations

CNSC staff recommend that the Commission:

1. **Renew** the proposed licence for the McClean Lake Operation UML-MINEMILL-McClean.00/2029 as put forward in this CMD.
2. **Accept** the proposed revised financial guarantee amount C\$122,557,378 for Orano's McClean Lake Operation for decommissioning.
3. **Delegate** authority as set out in section 5.5 of this CMD.

2 Environmental protection review

CNSC staff use ongoing licensing and compliance activities and reviews to verify that the environment, and the health and safety of persons are protected over the proposed licence period. CNSC staff conduct environmental protection reviews (EPRs) for all licence applications with potential environmental interactions, in accordance with the CNSC's mandate under the [NSCA](#) and associated regulations. The EPRs help inform the Commission's conclusion on whether the proposal provides adequate protection of the environment and the health of people.

CNSC staff's assessment of the MLO included a review of the licence application and supporting documents, including the environmental risk assessment, annual compliance monitoring reports, preliminary decommissioning plans, and past environmental performance for the facility (further details are provided in Section 3.9).

CNSC staff determined that the information provided by Orano regarding environmental protection is sufficient to meet the applicable regulatory requirements under the NSCA

and associated regulations for the 2-year licence renewal (further details are provided in Section 3.9).

CNSC staff will continue to verify and ensure that, through ongoing licensing and compliance activities and reviews, the environment and the health of persons are protected and will continue to be protected over the proposed licence period.

3 General assessment of SCAs

CNSC staff evaluate an applicant's proposed measures and controls, and, where relevant, assess a licensee's performance in each safety and control area (SCA) over the current licence period. Rating level categories for the SCAs are provided in Appendix A.

The regulatory and technical basis for the matters discussed in this CMD arise directly from the [Uranium Mines and Mills Regulations](#) (UMMR) and the [General Nuclear Safety and Control Regulations](#) (GNSCR) as well as other regulatory requirements associated with the [NSCA](#) and applicable regulations. Further information regarding the regulatory and technical basis for the matters discussed in this CMD is provided in Appendix B of this document.

The CNSC applies a risk-informed approach in the regulation of nuclear facilities and activities. Each licensed facility or activity is evaluated across a standardized set of SCAs. The extent of regulatory review for each SCA, as well as the baseline frequency of regulatory compliance activities, is determined by the risk ranking assigned to that SCA. The high-level definitions of each SCA are provided in Appendix C.1. Each SCA is comprised of "specific areas" of regulatory interest; however, the specific areas associated with each SCA vary between facility types. Appendix C.2 provides the specific areas that comprise the SCAs for the MLO.

CNSC staff's assessments provided in the following sections are based on a comprehensive review of Orano's past performance at the MLO and a thorough evaluation of the safety and control measures to be implemented for the proposed licence period. The SCA evaluation periods referenced within this CMD is from July 1, 2017, to September 30, 2025.

3.1 Management System

Safe and reliable operation requires a commitment and adherence to a set of management system principles and, consistent with those principles, the establishment and implementation of processes that achieve the expected results. The management system SCA covers the framework that establishes the processes and programs required to ensure an organization achieves its safety objectives, monitors its performance against these objectives and fosters a healthy safety culture. CSA standard N286-12, *Management system requirements for nuclear facilities* contains the requirements for a management system for nuclear facilities and extends to all SCAs. Orano employs an integrated quality management (IQM) system for the MLO, which includes management system policies and references to IQM procedures, work instructions, forms, and other controlled documents, such as reports and training manuals.

The following specific areas that comprise this SCA are discussed as relevant to the renewal application including:

- management system and organization
- performance assessment, improvements and management review
- change management and records management
- contractor management program.

3.1.1 Trends

The following table indicates the overall rating trends for the Management System SCA over the current licensing period:

TRENDS FOR MANAGEMENT SYSTEM								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has a mature management system program at the MLO which continues to improve to meet evolving regulatory requirements. CNSC staff monitor implementation of the management system at the operation through compliance verification activities which include desktop reviews and inspections. Orano continues to have an effective management system and has taken proactive steps to review and incorporate the requirements of CSA standard N286-12, <i>Management system requirements for nuclear facilities</i> into the MLO management systems								

3.1.2 Discussion

Orano has established a management system to oversee its MLO activities to assure the protection of the health and safety of workers, the public, and the environment. In April 2025, as part of the continual improvement, Orano submitted an updated Integrated Management System (IMS) Manual (Version 10). CNSC staff performed a desktop review building on CNSC staff's previous review of IMS Version 9 (November 2019), focusing on the changes made from Version 9 to Version 10. The changes include an updated organizational structure that now includes the Operational Excellence Department, Asset Reliability/Management Group, and Process Safety Group, as well as the addition of a Mine Department. CNSC staff concluded that Orano's updated IMS Version 10 meets the requirements as outlined in CSA N286-12.

CNSC staff monitored and evaluated the management system processes used for the licensed activities during the current licensing period.

Management system and organization

CNSC staff determined that Orano has a management system for the MLO that meets requirements as outlined in the licence conditions handbook (LCH). CNSC staff regularly

assess the compliance of the operations documents and programs through desktop reviews and planned compliance verification inspection activities.

Verification activities conducted throughout the licensing period included areas of maintenance, calibration, problem identification/resolution, change and design control, document and records control, procurement (specifically in the areas of receipt inspection and vendor audits), the internal audit program, management self-assessments and annual reviews. All inspection findings in this SCA over the licence period were of low safety significance.

CNSC staff also evaluated the organizational structure of the MLO. Personnel roles and responsibilities were also reviewed and confirmed to be well defined and documented. CNSC staff's compliance verification conducted during the current licence period verified no issues concerning the licensee's organizational structure and individual responsibilities of positions with oversight on licensed activities.

Performance assessment, improvements and management review

Orano's MLO management team conducts annual reviews to evaluate the previous year's performance against plans, assess compliance with standards, review the effectiveness of the management systems, and identify any trends impacting operations. CNSC staff assessed these management reviews as part of compliance verification activities and found them acceptable.

Orano also conducts internal assessments to confirm conformance and effectiveness of its licensed programs and associated documentation at the operation. Continued implementation of the IMS program at the MLO will be verified as part of CNSC staff's ongoing compliance verification activities.

Change management and records management

The change control procedure at the MLO ensures that changes are tested, reviewed and approved before implementation and that changes are controlled and carried out according to its change control documentation. Change control is a formal process used to ensure that changes to a product or system are introduced in a controlled and coordinated manner. The purpose of change control is to identify, evaluate, and control the risks associated with change.

The records management process at the MLO encompasses the control of documents, which includes the development, validation, approval of documents and the tracking of associated changes. CNSC staff confirmed that documents and procedures are available for use in the location of the activity and any outdated or expired documents are removed in a timely manner. Over the current licence period, the MLO change management programs and records management programs met CNSC requirements.

Contractor management program

Orano's contractor management program ensures that all contract workers at the MLO comply with the same requirements as the licensee's permanent staff. In 2025, CNSC staff reviewed Orano's contractor management program and carried out a focused management system onsite inspection. CNSC staff verified that Orano's documents and records provide information and implementation of the contractor management process; no issues identified. CNSC staff concluded that Orano's performance in this area is satisfactory.

Safety Culture

CNSC's [REGDOC-2.1.2, Safety Culture](#) was added to the MLO LCH, to verify the licensee's commitment to fostering a healthy safety culture. CNSC staff will continue to monitor licensee actions in support of a healthy safety culture over the licence period.

3.1.3 Summary

A summary of Orano's past performance, regulatory focus and proposed improvements at the MLO are presented in the following subsections.

3.1.3.1 Past Performance

Through review of Orano's documentation and CNSC staff's regular compliance inspections, CNSC staff found that Orano's performance in this area meets CNSC regulatory requirements. CNSC staff rated Orano's performance for the management system SCA at the MLO as satisfactory during the current licence period.

3.1.3.2 Regulatory Focus

CNSC staff verified through inspections and desktop reviews that Orano has implemented its management systems in accordance with CNSC's regulatory requirements.

In 2020 and 2025, 2 focused management system inspections were conducted at the MLO during the licence period. In addition, some general inspections also included management system criteria. Onsite verification activities included areas of maintenance, calibration, change and design control, document and records control, the internal audit program, management self-assessment, contractor management, work planning, work control, annual reviews and procurement (specifically in the areas of receipt inspection and vendor audits). All non-compliances identified by CNSC staff (e.g., incomplete record; missing signature; missing form 600-01-04 and an incomplete section in a change control documentation; update procedure 204 to

ensure communication; update contractor management document and related work instruction as suggested by CNSC staff) were of low safety significance and have been adequately addressed. Inspections throughout the proposed licence period will be conducted to continue verification of implementation of the CSA N286-12 requirements.

CNSC staff will continue monitoring Orano's performance in this area through regulatory oversight activities including inspections and desktop reviews.

3.1.3.3 Proposed Improvements

There are no other proposed improvements for this SCA.

3.1.4 Conclusion

CNSC staff concluded that Orano met its regulatory requirements and has maintained and implemented a satisfactory management system program at the MLO.

3.2 Human Performance Management

The human performance management SCA covers activities that enable effective human performance through the development and implementation of processes that ensure a sufficient number of licensee personnel are in all relevant job areas and have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties.

The specific area that comprises this SCA at the MLO is personnel training.

3.2.1 Trends

The following table indicates the overall rating trends for the human performance management SCA over the current licensing period:

TRENDS FOR HUMAN PERFORMANCE MANAGEMENT								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments CNSC staff consistently rated the human performance management SCA as satisfactory during the current licence period. Orano has an acceptable training program and has improved performance through the implementation of a systematic approach to training (SAT) at the MLO. Orano continues to maintain and improve its training system and confirm implementation.								

3.2.2 Discussion

The systematic approach to training (SAT) is the framework endorsed by the CNSC for establishing and maintaining training for people working in uranium mines and mills. The CNSC requires the licensee to ensure that employees and contractors are trained and assessed to confirm that they have acquired and maintain the knowledge, skills, and competencies to safely perform their work assignments. Orano has implemented an SAT system to train its workers at the MLO.

Orano reports to the CNSC annually on improvements to its training programs and training delivered to workers. CNSC staff review Orano's adherence to its training system and maintenance of training records through periodic routine compliance inspections.

[CNSC's REGDOC-2.2.2, Human Performance Management, Personnel Training](#), updated in December 2016, defines requirements for the development and implementation of a training system in a nuclear facility. It requires licensees to systematically analyze, design, develop, implement, evaluate, document and manage training for people working in a nuclear facility. Orano completed an assessment of its training documentation against REGDOC-2.2.2, confirming implementation. CNSC staff verified the implementation of REGDOC-2.2.2 at the MLO via a training focused inspection

carried out in January 2021. CNSC staff will continue to verify Orano's progress on implementing programs and procedures at the MLO that support the human performance management SCA as part of ongoing regulatory oversight activities.

CNSC staff concluded that Orano is qualified to carry out its authorized licensed activities and CNSC staff are satisfied with the training system at the MLO.

3.2.3 Summary

A summary of Orano's past performance, challenges and proposed improvements for human performance management at the MLO are presented in the following subsections.

3.2.3.1 Past Performance

Based on a comprehensive review of Orano's updated training documentation, annual reports and routine compliance inspections, CNSC staff concluded that Orano's performance in this area meets regulatory requirements. CNSC staff rated Orano's overall performance for the human performance management SCA at the MLO as satisfactory for the current licence period. CNSC staff are also satisfied that Orano has taken, and will continue to take, all appropriate corrective actions necessary to resolve any non-compliances that stem from inspections and document reviews conducted during and/or after the current licence period.

3.2.3.2 Regulatory Focus

The inspections were used to evaluate and verify compliance of Orano's training programs and assess its implementation. During the current licence period, human performance management criteria were included in other general inspections conducted by CNSC staff at the MLO. Additionally, in 2021, 1 focused inspection on human performance management was also conducted during the current licence period. All non-compliances identified by CNSC staff (e.g., training for escape hoods; missing document analysis for defined position; linking tasks to both initial and continuing training course; assess training need to identify changes to tasks; update training program evaluation; adding commitment to security culture in governing documentation) were of low safety significance and have been adequately addressed. Inspections throughout the proposed licence period will be conducted to continue verification of implementation of REGDOC-2.2.2 and SAT.

Orano's revised management system included sections related to the training system and a suite of training procedures. CNSC staff evaluated Orano's training system

documentation and determined that regulatory requirements of the human performance management (training) SCA were met.

CNSC staff will continue to monitor performance in this area through routine regulatory oversight activities including inspections and desktop reviews.

3.2.3.3 Proposed Improvements

There are no other proposed improvements for this SCA. For the current licence period, the performance rating for this SCA has been focused on the training programs and its implementation.

As part of on-going compliance activities, CNSC staff will continue to review any proposed modifications to Orano's training system and programs.

3.2.4 Conclusion

CNSC staff concluded that Orano met its regulatory requirements and has maintained and implemented a satisfactory human performance management program at the MLO. CNSC staff rate the human performance management SCA as satisfactory.

3.3 Operating Performance

The operating performance SCA includes an overall review of the conduct of the licensed activities and other activities that enable effective performance. The specific areas that comprise this SCA are not addressed individually in this CMD.

3.3.1 Trends

The following table indicates the overall rating trends for the operating performance SCA over the current licensing period:

TRENDS FOR OPERATING PERFORMANCE								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has implemented and maintained operating performance programs at the MLO that include construction, commissioning and operation of the facilities in accordance with CNSC regulatory requirements. CNSC staff monitor implementation of these operating programs through compliance verification activities, which include desktop reviews and inspections. The operating performance SCA is included in many CNSC staff inspections at the MLO. CNSC staff's compliance activities verify that Orano continues to improve its operating performance. Orano's operating performance program at the MLO continues to be effective and meets regulatory requirements.								

3.3.2 Discussion

The operating performance SCA requires that the licensee implement and maintain an operating performance program for the conduct of licensed activities. This SCA focuses on the conduct of operations and the controls that are in place to manage and mitigate risks from licensed activities.

Orano is required to take all reasonable precautions in accordance with regulatory requirements to protect workers and to control the release of nuclear and hazardous substances into the environment during the conduct of activities. The necessary precautions include engineering and administrative controls to minimize risks. CNSC expects the licensee to maintain the integrity of its facilities and to apply managed processes for operations and control.

CNSC staff confirmed throughout the licence period that Orano operated the MLO in accordance with regulatory requirements. CNSC staff are satisfied with Orano's programs, which provide adequate assurance that any modifications to the facility or its operation will remain within the licensing basis.

3.3.3 Summary

A summary of Orano's past performance, challenges and proposed improvements are presented in the following subsections.

3.3.3.1 Past Performance

Orano has operated the MLO in compliance with CNSC regulatory requirements during the licensing term and CNSC staff's findings from inspections or desktop reviews were addressed in a timely manner. CNSC staff rated Orano's overall performance for the operating performance SCA as satisfactory for the current licence period.

3.3.3.2 Regulatory Focus

During the current licence period, events related to plant operations, lost time injuries (LTIs), environmental spills, radiation protection (RP) and environmental protection (EP) action level exceedances were reported to the CNSC according to the regulatory reporting requirements and other relevant regulators including Saskatchewan Ministry of Environment (SMOE), Ministry of Labour Relations and Workplace Safety, and Environment and Climate Change Canada. The majority of the incidents were of low safety significance except LTIs and effluent regulatory limit exceedances which are rated as medium safety significance. In accordance with its Public Information Program and Disclosure Protocol, Orano has continued to proactively disclose reportable events.

CNSC staff verified that Orano conducted investigations into these events to determine probable causes and that necessary corrective actions were taken to prevent reoccurrences. CNSC staff confirmed that persons and the environment continue to be safe. CNSC staff are satisfied with the MLO event reporting, investigation process, and timely implementation of corrective actions and lessons learned to minimize and/or eliminate future reoccurrences.

CNSC staff review all reported events to identify if there are any regulatory concerns and report significant events at public meetings of the Commission. Details on each reported event is included in the Regulatory Oversight Report (ROR) on uranium mines and mills for the year in which the event occurred. Additional information on radiation protection, environmental protection and health and safety incident/events are provided in the respective sections within this CMD.

In 2018 and 2023, 2 focused operating performance inspections were conducted at the MLO during the current licence period. The operating performance SCA was also

included as compliance verification criteria in other general CNSC inspections at the MLO. All non-compliances identified by CNSC staff (e.g., posting of licence; target dates extended for implementation of corrective actions; referenced documents in change control not captured in digital formatting; Form 741-07-01 record not completed accurately; posting of previous radiation monitoring report) were of low safety significance and have been adequately addressed. CNSC staff confirmed that workers, the public and the environment continue to be protected.

CNSC staff will continue to monitor performance in this area through regulatory oversight activities including inspections and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation pertaining to this SCA for the MLO.

3.3.3.3 Proposed Improvements

Improvements to operation, equipment and programs are identified on an ongoing basis and implemented as part of a process of continuous improvement. There are no other proposed improvements for this SCA.

3.3.4 Conclusion

During the current licence period, CNSC staff observed that Orano has operated the MLO in compliance with the CNSC's regulatory requirements.

CNSC staff concluded that Orano has maintained and satisfactorily implemented its operational performance programs and has made adequate provision for safe operation of the MLO. CNSC staff rate the operating performance SCA as satisfactory.

3.4 Safety Analysis

The safety analysis SCA covers the maintenance of the safety analysis that supports the overall safety case for the facility. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventative measures and strategies in reducing the effects of such hazards.

The specific area that comprises this SCA at the MLO is hazard analysis.

3.4.1 Trends

The following table indicates the overall rating trends for the operating performance SCA over the current licensing period:

TRENDS FOR SAFETY ANALYSIS								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has implemented and maintained processes at the MLO to identify hazards and assess risks related to the protection of the environment and to the health and safety of workers and the public, as well as radiation protection. CNSC staff verify Orano's implementation of the safety analysis SCA through inspections and desktop reviews. Orano's safety analysis program at the MLO continues to be effective in providing CNSC staff with an assessment of proposed changes or modifications, identification and evaluation of risks and impacts, and proposed mitigation measures.								

3.4.2 Discussion

As a licensing requirement, Orano must implement and maintain a process to identify and assess hazards and risks on an ongoing basis at the MLO. This includes identifying and evaluating new or unforeseen risks that were not considered at the planning and design stages and updating previous risk assessments by replacing important assumptions with performance data.

Hazard analysis

Hazard analysis provides an opportunity to identify and mitigate potential hazards to workers' health and safety, and to the environment, to an acceptable level. These analyses are completed by workers and subject matter experts before the work begins. Orano uses the following methods for identifying risks and hazards at the MLO as the jobs are being planned:

- risk assessment
- safe work plans

Risk assessment

Orano's MLO continues to maintain a register of hazards, risks and mitigation measures for the facility, which are reviewed and updated for the new projects, significant changes or modifications and non-routine tasks. Risk assessments are carried out to identify, manage, and reduce the potential of adverse risk. An assessment of controls is conducted as required and may be triggered by:

- predetermined need to re-evaluate a control
- changes to processes or facilities
- an incident
- an identified non-conformance
- legislation/regulation changes
- required actions as identified in investigations, inspections or by regulators.

Risks are mitigated with consideration to the following hierarchy:

- elimination
- substitution
- engineering controls
- signage/warnings and/or administrative controls
- personal protective equipment.

Safe work plans

Safe work plans are prepared for any work considered non-routine and high risk. The purpose of a safe work plan is to assess hazards specific to tasks, to ensure controls are developed and that all personnel understand the risks associated with the completion of the job. The safe work plan outlines the tasks and hazards involved, corrective actions, level of risk, training and personal protective equipment required. Safe work plans are to be reviewed and signed by all personnel working on the job.

Prior to implementing any significant change or modification to the facility, its operation or safety and control measures described in the documents provided to support the application, Orano must provide the CNSC with an assessment of the proposed changes or modifications, identification and assessment of potential risks, impacts, proposed mitigation measures, and demonstrate that the changes meet the objective of the licensing basis.

Orano has a change control process for the MLO, which CNSC staff have reviewed and accepted. Changes to facility processes are completed through the change control process, which also includes a risk assessment requirement. CNSC staff conducted inspections and desktop reviews to confirm that safety analysis is also completed on an

ongoing basis on specific job requirements to assess all jobs of non-routine or complex nature.

3.4.3 Summary

A summary of Orano's past performance, challenges and proposed improvements are presented in the following subsections.

3.4.3.1 Past Performance

Through CNSC staff's review of Orano's MLO documentation, CNSC staff concluded that the safety analysis program meets regulatory requirements.

For the current licence period, CNSC staff rated Orano's overall performance for the safety analysis SCA as satisfactory for the MLO.

3.4.3.2 Regulatory Focus

CNSC staff conducted inspections and desktop reviews to confirm that Orano's MLO performs safety analyses for specific job requirements, particularly for non-routine or complex work. Through inspections, CNSC staff also verified that Orano has the necessary safety analyses to plan, implement and monitor construction operations ensuring mitigation of risks to workers, the public and the environment have been conducted. In March 2018, 1 inspection focused on safety analysis was conducted by CNSC staff at the MLO and found Orano to be in compliance. Safety analysis criteria were also included in other general inspections conducted by CNSC staff at the MLO, during the current licence period. All non-compliances identified by CNSC staff (e.g., develop processes to identify critical monitoring equipment; assess impact of deviations in measuring equipment; develop criteria how the health and safety of workers are considered in the designation of critical equipment; tracking current status of radiation measurement equipment) were of low safety significance and have been adequately addressed.

3.4.3.3 Proposed Improvements

There are no other proposed improvements for this SCA.

3.4.4 Conclusion

Based on the above assessment, CNSC staff concluded that Orano is meeting the regulatory requirements to protect workers and the environment at the MLO as it relates to the development and maintenance of the safety analysis for the facility.

3.5 Physical Design

The physical design SCA relates to activities that impact the ability of structures, systems and components to meet and maintain its design basis given new information arising over time and taking changes in the external environment into account.

The specific areas that comprise this SCA at the MLO are not addressed individually in this document.

3.5.1 Trends

The following table indicates the overall rating trends for the physical design SCA over the current licensing period:

TRENDS FOR PHYSICAL DESIGN								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has implemented and maintained design control processes at the MLO that verify and validate the design to ensure safety, performance and dependability of the facility. Orano has a mature physical design control system in place, which continues to remain effective and meet regulatory requirements.								

3.5.2 Discussion

The CNSC licence requires Orano to implement and maintain a design control program to ensure that design outputs are verified against design inputs and performance expectations. The design control process includes:

- design planning
- input
- output
- review
- verification
- validation
- transfer
- records

- change management

Orano uses facility change control and design control processes to ensure that any physical changes to the facility are reviewed and approved by site management before implementation. The change management process includes a risk assessment requirement for new designs and design changes. The change control and design control processes at the MLO have been reviewed and accepted by CNSC staff.

Orano's MLO physical design is described and documented in its facility description manual (FDM). The FDM provides details including physical description, technical specifications and capacities of the different mill circuits. The MLO has been designed to process high grade ores at higher production rates without any dilution. The licensee is encouraged to make continuous improvements to the design of the facilities and equipment. CNSC staff will continue to monitor any proposed changes to the design to ensure that the changes remain within the licensing basis authorized by the Commission.

The following provides information on the most significant changes and improvements which have been made or are in process at the MLO during the current licence period.

SX circuit fire suppression system improvements

Orano is upgrading the existing fire detection and suppression systems in the Solvent Extraction (SX) Circuit. These changes will help to detect, suppress, and extinguish a fire as close to the source and as early as possible, minimize potential fire damage, and improve overall fire safety. The SX Circuit fire detection and suppression upgrade project is being completed in 4 phases. Each phase is reviewed by a third-party consultant in line with the requirements of CSA N393:22.

Orano has completed the following 2 phases of the project:

Phase 1 - Heat probes installation inside organic solvent containing vessels and tanks

Phase 2 - Triple Infrared Detection (IR3) and linear heat detection installation in SX containment areas

Following phases are expected to be completed by August 2026.

Phase 3 - Compressed air foam system installation

Phase 4 - CO₂ system upgrades

SABRE mining solids separation system

Orano has upgraded the Surface Access Borehole Resource Extraction (SABRE) mining solids separation system by replacing the fines separation equipment. The upgraded equipment increased the fines separation efficiency, reduced the amount of fines reporting to the sedimentation pond, and streamline fine ore management. Orano

carried out a risk assessment for the project and found no unacceptable risks concerning safety, radiation protection, or the environment. Orano confirmed that the new separation equipment can be operated while continuing to maintain a high level of protection for the health, safety, and security of the public and workers, and the protection of the environment.

Tailings deposition line modifications

JEB Tailings Management Facility (JEB TMF) is designed to limit the post-closure potential impact of tailings constituents on the receiving environment over the long term. The sub-aqueous tailings deposition method was approved and installed in 2018. The current layout of tailings deposition lines was implemented in 2021. The tailings deposition lines exit the header barge and extend into the JEB TMF pond at approximately 2 meters below water surface. The lines are anchored in place by cast iron weights with floats and stay at a fixed level below the water surface. The tailings deposition lines must be relocated periodically to allow for the uniform deposition of tailings throughout the facility. These anchors need to be cut before tailings deposition pipelines can be moved to new deposition points. This process requires considerable effort and limits the system's operational efficiency and flexibility.

Orano introduced floating tailings lines with sub-aqueous deposition points. The floating lines are 300 metres long and can reach any point of the TMF pond. When necessary, the deposition location can be adjusted by moving the deposition point at the end of the line. Implementation of floating lines has simplified future adjustments to tailings deposition points location and facilitate safe, efficient, and flexible use of the existing subaqueous tailings deposition system.

Ammonium sulphate crystallization plant equipment replacement

The Ammonium Sulphate Crystallization Plant (CX Plant) at the McClean Lake Mill performs an important function by removing excess ammonium sulphate produced by addition of ammonia in the Solvent Extraction (SX) and Yellowcake Precipitation circuits. In simplistic terms, water is evaporated from the feed solution and recovered as a condensate, while ammonium sulphate is crystallized and dried to produce a marketable fertilizer product.

From 2013-2016, the plant was expanded to accommodate additional excess ammonium sulphate solution that resulted from the planned restart of the mill. This expansion consisted of the addition of 1 evaporation vessel, 1 crystallization vessel, and 2 new ion exchange columns with the plant equipment being rearranged in 2 trains each with 2 evaporators and 1 crystallizer. Although the new equipment and rearrangement of the CX Plant functioned as intended, bottlenecks were occurring, and efficiencies could be realized by upgrading some aging equipment. Orano eliminated the existing

settler, upgraded the centrifuge, replaced the existing fluid bed dryer and screw feeder, replaced the fluid bed dryer air heater, and replaced the rotary valve. Orano conducted a risk assessment for the project and confirmed that no residual impacts were identified concerning safety, radiation protection, the environment, security, or Canada's international obligations. The equipment upgrades were similar in operation to existing equipment and remain within the previously assessed and approved licensing basis. The changes have improved performance of the plant and created a safer and more operable CX Plant.

Replacement of effluent discharge pipeline from JEB water treatment plant to Sink Reservoir

Treated effluent from the JEB WTP is released to Sink Reservoir via a pipeline that runs from the JEB WTP to Sink Reservoir. The original 18-inch pipeline was designed to carry the combined flows from the JEB WTP and the JEB TMF dewatering wells. A decrease in pipeline flow rate occurred when the JEB TMF dewatering wells were decommissioned in 2014. As a result of the decreased flow rate, the velocity of the treated effluent was no longer sufficient to keep gypsum solids (calcium sulphate, CaSO_4) suspended and resulted in a gradual build-up of gypsum solids in the pipeline. In May 2023, as an interim measure, flow restrictions were partially bypassed with the installation of a temporary 10-inch line.

To restore discharge capacity, Orano installed a new, insulated 10-inch pipeline, parallel to the existing line, extending approximately 5 km from the JEB WTP to the Sink Reservoir, to serve as the primary discharge line. Orano determined that a 10-inch pipeline was the appropriate diameter to maintain the required flow rate from the JEB WTP. A risk assessment was conducted for the installation and operation of the replacement effluent discharge pipeline. Orano confirmed that the work can be conducted in a manner that does not present an unreasonable level of risk to the public, workers, or the environment. The existing 18-inch pipeline will remain in place, along with the recently installed 10-inch bypass line (not operational), as a contingency backup to the new 10-inch pipeline.

JEB TMF expansion during current licensing term

In June 2016, Orano submitted a request to expand the JEB tailings management facility. The proposed expansion would provide additional tailings capacity of 1.7 million cubic meters with sufficient water cover and freeboard. The expansion requires:

- construction of an embankment around a portion of the JEB TMF perimeter to bring the low-side elevation from 448 metres above sea level (mASL) to 457.5 mASL

- placement of a processed waste rock/till bentonite-amended liner for hydraulic containment up to 452.5 mASL

After conducting a technical assessment of the submission as per NSCA 3.(a), 9.(a)(i), GNSC Regs 12.(1)(c) (f) and RP Regs 4,13,14, CNSC staff approved the project in April 2017. Orano started construction in 2018 with the relocation of infrastructure (e.g., power lines, tailings barge and anchor points, tailings lines, reclaim water lines, tailings delivery pipeline, and under flow pump) and completed the TMF expansion project in 2023.

In August 2021, CNSC staff conducted a focused inspection of the JEB TMF expansion project to assess the ongoing construction activities. CNSC staff found the licensee to be in compliance with the inspection criteria, and therefore no notices of non-compliances were issued.

JEB TMF Expansion during proposed licensing term

On June 16, 2020, Orano submitted an application to the CNSC to amend its Uranium Mine Operating Licence UMOL-MINEMILL-McCLEAN.01/2027 for the JEB TMF expansion at the MLO. At the time, the approved maximum elevation of the JEB TMF was 457.5 metres above sea level (mASL), with consolidated tailings permitted up to 448 mASL. The proposed expansion would raise the TMF height to 468 mASL and increase the allowable elevation of consolidated tailings to 462 mASL. The proposed expansion of the JEB TMF will be achieved through the continued construction of an engineered embankment and placement of a bentonite amended crushed waste rock liner. On October 4, 2021, the Commission approved the JEB TMF expansion and issued amended licence UMOL MINEMILL-McCLEAN.02/2027.

Based on current mining and milling projections, Orano anticipates generating approximately 3.0 million cubic metres (MCM) of additional tailings over the next 15 years. Under the proposed vertical expansion to 468 mASL, approximately 2.3 MCM of additional tailings could be accommodated within the expanded JEB TMF while maintaining a minimum 1-metre water cover over the tailings mass. Orano plans to start the JEB TMF expansion phase 2 during the next licensing term. Orano will provide construction details prior to initiating any construction activities for CNSC staff review and acceptance.

Table 3.5 shows the different components of the JEB TMF and consolidated tailings with the current and future embankment elevations.

Table 3.5: McClean Lake – Current and future JEB TMP consolidation tailings and embankment elevation

Component	Current Embankment to 457.5 mASL	Future Embankment to 468 mASL
Top of embankment	457.5 mASL	468 mASL
Top of placed tailings	452 mASL	465.5 mASL
Top of consolidated tailings	448 mASL	462 mASL
Created additional tailings capacity	1.5 MCM	2.3 MCM
Total volume of tailings capacity	4.6 MCM	6.9 MCM

3.5.3 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.5.3.1 Past Performance

During this licence period, CNSC staff verified that Orano followed the proper design control process for any modifications or additions to facilities, processes, or equipment. The design control process is also used for any new development (e.g., design not related to existing facilities). Other examples of upgrades or replacements to the physical design made during the licence period were reviewed and found acceptable by CNSC staff.

3.5.3.2 Regulatory Focus

CNSC staff will continue to monitor performance in this area through ongoing regulatory oversight, including inspections and desktop reviews of the MLO's compliance reporting and revisions to the associated program documentation for this SCA. CNSC staff conducted 1 focused physical design inspection at the MLO during the current licence period, with another planned before the end of the proposed licence period. The physical design criteria were also included in other general inspections conducted by CNSC staff at the MLO. All non-compliances identified by CNSC staff (e.g., consistency with design authority; training for sign-off process) were

of low safety significance and have been adequately addressed. Orano's MLO continues to implement and follow the design control process as per CNSC's regulatory requirements.

3.5.3.3 Proposed Improvements

Orano plans to start the JEB TMF expansion (up to 468 mASL) during the next licensing term which received Commission approval in 2021. CNSC staff will ensure, through compliance verification activities, that construction progresses safely, and that the environment is protected. Orano is required to verify hydrodynamic containment of the JEB TMF and report to the CNSC through its annual report.

Improvements to operation, facility equipment and processes are identified on an ongoing basis and implemented as part of continuous improvement.

3.5.4 Conclusion

CNSC staff verified that Orano carried out significant upgrades to the facility during the current licence period, in line with its approved design and change management program for the MLO. Orano's projects were completed as planned and within its respective safety cases, with no major deficiencies or events. CNSC staff assessed Orano's documentation and analyses under this SCA and found it acceptable. CNSC staff concluded that Orano's overall performance at the MLO for this SCA is satisfactory and that Orano is qualified to carry out the authorized activities in this SCA.

3.6 Fitness for Service

The fitness for service SCA covers activities that impact the physical condition of structures, systems and components to ensure that they remain effective over time. This area includes programs that ensure equipment is available to perform its intended design function whenever required.

The specific areas that comprise this SCA at the MLO are not addressed individually in this document.

3.6.1 Trends

The following table indicates the overall rating trends for the fitness for service SCA over the current licensing period:

TRENDS FOR FITNESS FOR SERVICE								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has implemented and maintained programs to ensure structures and equipment remain effective and perform as designed over time at the MLO. CNSC staff are satisfied with the implementation of the fitness for service program at the MLO.								

3.6.2 Discussion

The fitness for service SCA at the MLO covers activities that are carried out to ensure that the physical condition of structures, systems and components remain effective over time. This includes programs that ensure all equipment is reliably available to perform its intended design function when required. The CNSC requires the licensee to implement and maintain a maintenance program to comply with regulatory requirements and accepted industry practice to minimize potential impacts to workers, the public and the environment. In addition, maintenance activities must provide assurance to achieve desired results, provide effective management of inventory of spare parts, manage maintenance records and procedures and provide systematic management of maintenance change control. The fitness for service program is required to provide documentation and formalized pre-established maintenance activities.

Orano's maintenance group organizes and stores equipment information, maintenance records and facilities information on a computerized maintenance management system to coordinate the routine, predictive and preventative maintenance activities at the MLO. This computerized maintenance management system keeps track of the preventive maintenance program for all equipment and logs the equipment operating history. A facility change control procedure, reviewed and accepted by CNSC staff, is in place to control and record changes to the facilities.

CNSC inspections and desktop reviews verified that Orano maintains the MLO in line with regulatory requirements and uses operational experience to sustain long-term effectiveness. Orano has identified safety-significant structures, systems, and components at the MLO and implemented documented and approved maintenance programs to ensure its ongoing effectiveness. The requirements of this program are documented in the IMS and related procedures.

CNSC staff's review of the maintenance management systems at the MLO during regular inspections confirms that preventative maintenance activities are scheduled, completed and recorded. CNSC staff also routinely inspected maintenance records associated with the preventative maintenance programs and found them acceptable. Random sampling of equipment, maintenance and monitoring records were also verified during inspections. These compliance verification activities confirmed that the maintenance program is well implemented.

3.6.3 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.6.3.1 Past Performance

Based on the results of compliance inspections and desktop reviews, CNSC staff rated Orano's performance for the fitness for service SCA at the MLO as satisfactory for the current licence period.

3.6.3.2 Regulatory Focus

CNSC staff conducted 2 fitness for service focused inspections at the MLO. Fitness for service criteria were also included in other general inspections conducted by CNSC staff during the current licence period. All non-compliances identified (e.g., backlog of maintenance items; equipment testing; formalize the equipment sharing procedure; fire door obstruction; tracking of radiation measurement equipment; calibration records of the SO₂ monitors and H₂S monitors are accurately and consistently completed) were of low safety significance and have been adequately addressed.

CNSC staff will continue to monitor performance in this area through regulatory oversight activities including inspections and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation.

3.6.3.3 Proposed Improvements

There are no other proposed improvements for this SCA.

3.6.4 Conclusion

CNSC staff reviewed Orano's MLO documentation under the fitness for service SCA and confirmed compliance. Orano continues to maintain its facilities to ensure the ongoing effectiveness of structures, systems, and components.

3.7 Radiation Protection

The Radiation Protection SCA covers the implementation of a radiation protection (RP) program in accordance with the [Radiation Protection Regulations](#) (RPR). The program must ensure that radiation doses received by individuals and contamination levels are monitored, controlled and maintained as low as reasonably achievable (ALARA).

The specific areas that comprise the RP SCA are as follows:

- application of ALARA
- worker dose control
- radiation protection program performance
- radiological hazard control

3.7.1 Trends

The following table indicates the overall rating trends for the RP SCA over the current licence period:

TRENDS FOR RADIATION PROTECTION								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
FS	FS	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano implemented and maintained an RP program that meets regulatory requirements and protects the health and safety of workers at the MLO. During the current licence period, no worker received a radiation dose in excess of CNSC regulatory limits. CNSC staff are satisfied with the implementation of the RP program at the MLO.								

3.7.2 Discussion

The RPR requires licensees to implement an RP program. As part of that program, licensees must also keep effective and equivalent doses received by and committed to persons ALARA, taking into account social and economic factors. These include management control over work practices, personnel qualification and training, control of occupational and public exposures to radiation, and planning for unusual situations. The RPR also prescribe dose limits for workers and members of the public.

Orano implemented an RP program at the MLO which meets the requirements of the RPR. As required by the [UMMR](#), Orano's RP program includes a radiation code of practice (RCOP). The RCOP defines the effective dose action and administrative levels for workers, administrative levels for worker's uranium-in-urine concentrations, as well as provisions for monitoring radiological conditions of work areas for gamma radiation, radon gas (RnG), radon progeny (RnP), and long-lived radioactive dust (LLRD). It also details the use of respiratory protection through the Radiation Work Permit process for controlling non-routine radiological exposure situations.

Focused highlights are provided for each specific area of the RP SCA. CNSC staff's assessment of Orano's performance by specific area considers indicators such as monitoring performance data, event reviews, and results of CNSC compliance inspections.

Application of ALARA

Commitment to the ALARA principle has been demonstrated by Orano with the application of ALARA integrated within the RP program implemented at the MLO. Annually, ALARA targets are established for the MLO focused on worker dose reduction initiatives, in addition to tracking of key performance indicators for parameters such as RP training, personnel dosimetry results, and workplace monitoring data. Because RP has been incorporated into the design of the facility (e.g. lead shielding, concrete enclosures and lined leach tanks), the routine radiation levels at the MLO in most areas are typically low and result in exposures well below regulatory limits.

Worker Dose Control

As required by the RPR, all nuclear energy workers (NEWs) are informed in writing of their NEW status and corresponding risks associated with ionizing radiation that they may be exposed to in the course of their work and while carrying out their responsibilities during emergencies. Female NEWs are also informed, in writing, of their rights related to pregnancy and breastfeeding, and of the risks associated with the exposure of embryos and fetuses to radiation and the risks to breastfed infants from the intake of nuclear substances.

The contributors to worker doses at the MLO are gamma radiation, RnG, RnP and LLRD. Design features of the MLO include controls for gamma radiation, RnG, RnP and LLRD. These include the use of shielding and ventilation, supported by other controls such as housekeeping standards, personnel training and qualifications, and dose management tools such as work planning, action and administrative levels, and management oversight to ensure radiation doses to workers are controlled below regulatory dose limits and kept ALARA.

Orano's dosimetry program at the MLO includes techniques for ascertaining external and internal doses. The total effective dose assignment for workers is comprised of the sum of the external whole-body dose, as measured by optically stimulated luminescent dosimeters, and internal exposures, measured by personal alpha dosimeters and/or ascertained using indirect monitoring methods (i.e., time spent by a worker in a certain airborne concentration).

During the current licence period from 2017 to 2025, worker doses at the MLO resulted from the following 3 primary dose contributors (average percentage contribution over the licensing period is noted in parentheses):

- gamma radiation (42%)
- radon progeny (35%)
- long-lived radioactive dust (23%)

RnG concentrations are very low and well controlled and therefore do not contribute appreciably to occupational exposures to workers.

Error! Reference source not found. displays the maximum and average individual effective doses to NEWs at the MLO from 2017 to September 30, 2025. The effective doses are well below the regulatory dose limit of 50 mSv per 1-year dosimetry period for NEWs. The highest maximum individual effective dose received by a NEW occurred in 2024. This NEW was assigned an effective dose of 9.1 mSv; a value that is 18.2% of the annual effective regulatory dose limit of 50 mSv for NEWs. The dose for this worker is related to having increased overtime hours and working in a higher ambient radiation area.

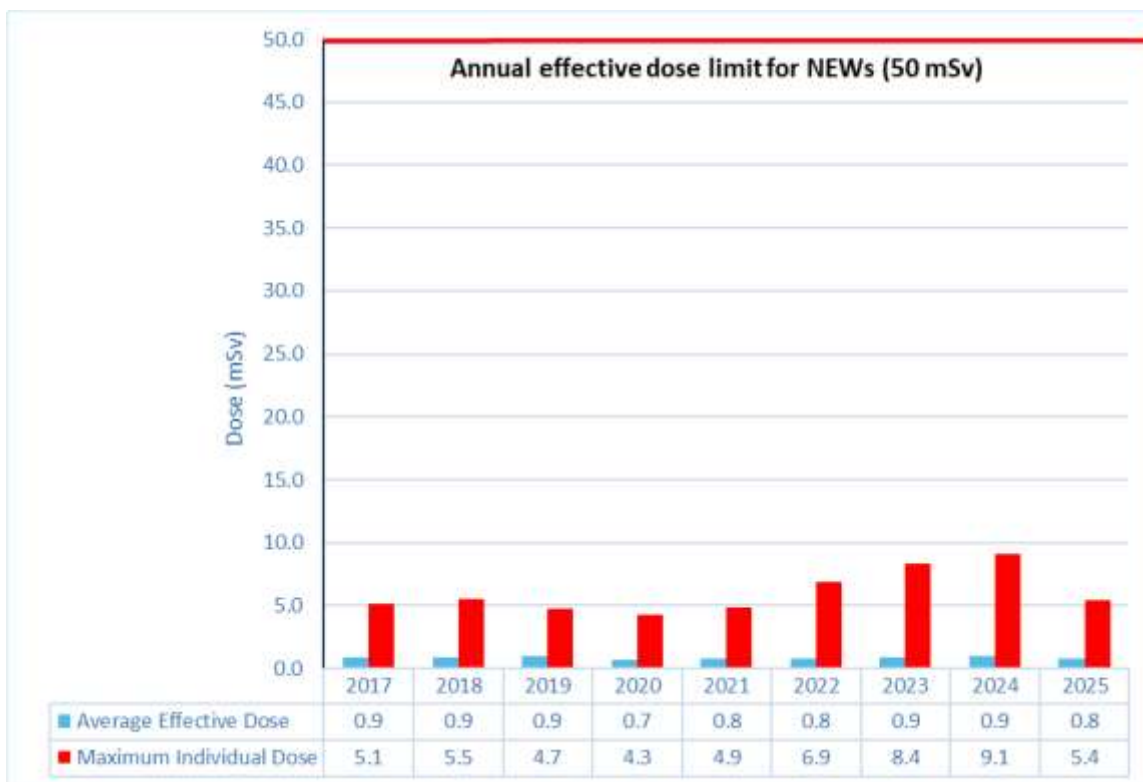


Figure 7.1: Maximum individual and average effective dose for NEWs, 2017-2025* (Source: CNSC)

*Note that the average and maximum effective dose statistics for 2025 are up to September 30, 2025.

As defined in the RPR, the 5-year dosimetry period is a fixed 5-year period. The 5-year dosimetry periods that are applicable over the licence period are 2016 to 2020, and 2021 to 2025. The maximum individual effective dose for a NEW during each of these periods is shown in Table 7.1. The effective doses are well below the regulatory dose limit of 100 mSv per 5-year dosimetry period for NEWs.

Table 7.1: Maximum effective doses for a NEW during the 5-year dosimetry periods, 2016-2025

5-year Dosimetry Period	2016-2020	2021-2025
Maximum Individual Effective Dose for a NEW	20.5 mSv	29.8 mSv as of September 30, 2025

Figure 7.2 displays the annual collective doses³ for NEWs at the MLO from 2017 to September 30, 2025. The annual collective dose totals for the MLO ranged from 307 person-mSv (p-mSv) in 2017, to 386 p-mSv in 2025. The variability in collective dose over the licence period is attributed to many factors including number of workers and work activities conducted, and mill production days.

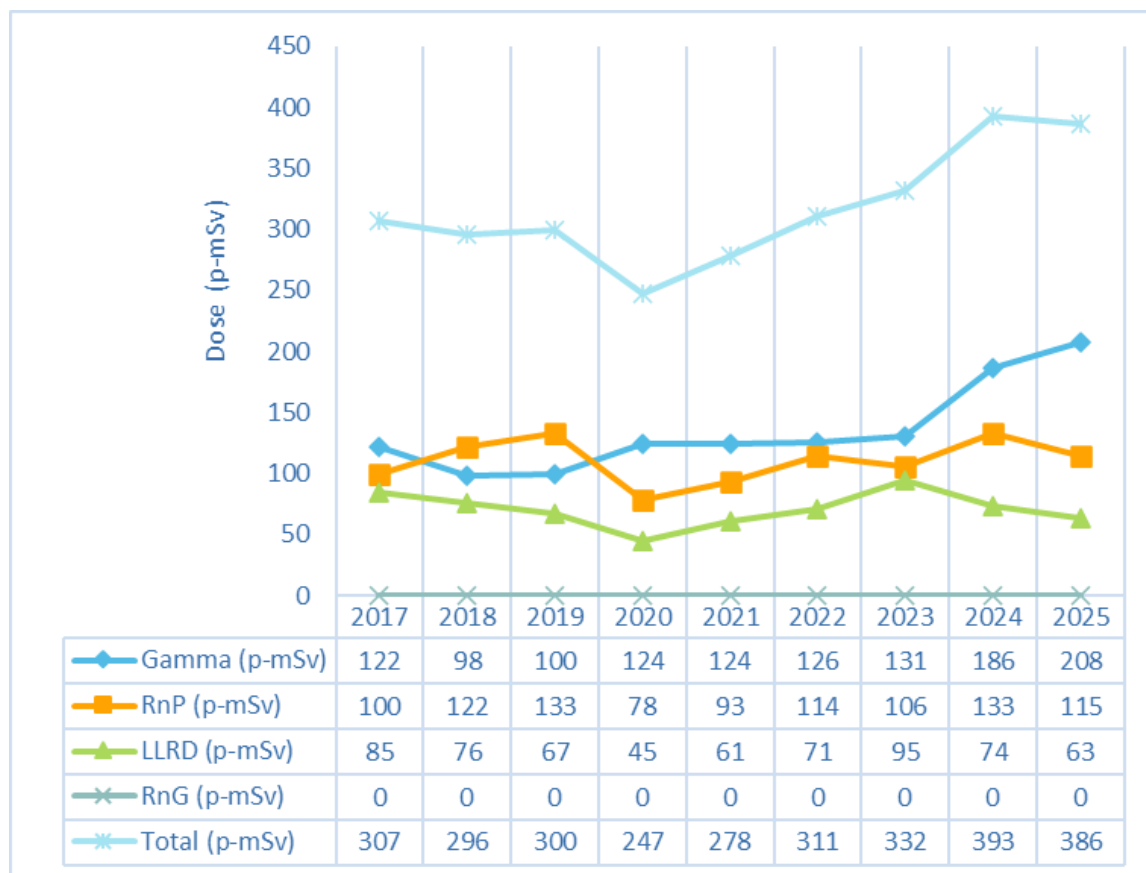


Figure 7.2: Annual collective doses for NEWs, 2017-2025* (Source: CNSC)

*Note that the annual collective dose statistics for 2025 are up to September 30, 2025.

³ The annual collective dose is the sum of effective doses assigned to all NEWs at MLO in a given calendar year.

Radiation protection program performance

CNSC compliance activities

CNSC staff assessed the RP program performance at the MLO over the current licence period through various compliance verification activities including desktop reviews of quarterly radiation exposure reports and annual compliance reports. CNSC staff have observed and verified RP practices at the MLO during general compliance inspections over the licence period.

As a result of desktop reviews and compliance verification activities, CNSC staff confirmed that Orano is effectively implementing the RP program requirements at the MLO.

Radiological action levels

The [UMMR](#) and the [RPR](#) require that a licensee report any RP action level exceedances. Orano established action levels in the RCOP for the MLO for effective dose as 1 mSv per week and 5 mSv per quarter. Action level exceedances during the current licence period at the MLO are outlined in Table 7.2.

Table 7.2: Action level exceedances, 2017-2025

Period	2017	2018	2019	2020	2021	2022	2023	2024	2025*
Weekly Action Level (1 mSv/week)	0	0	0	1	0	0	2	0	0
Quarterly Action Level (5 mSv/quarter)	0	0	0	0	0	0	1	0	0

*The 2025 reporting period is January 1, 2025, to September 30, 2025

All action level exceedances provided in the table were discussed in the applicable [uranium mines and mills RORs](#). CNSC staff are satisfied with Orano's investigations, responses, and corrective actions taken to address the action level exceedances over the current licence period. The exceedances occurred during non-routine work activities, and Orano's corrective actions included improvements to training, radiation work planning and implementation of controls for the radiation safety of workers.

Radiological hazard control

Orano incorporated specific RP features into its mill design (e.g. lead shielding, concrete enclosures and lined leach tanks) to process high-grade uranium ore at the MLO. These design features were established to limit radiological hazards (for all types) to specific design hazard objectives. Orano also implements a comprehensive monitoring program

that is highly effective at controlling radiological hazards and the spread of radioactive contamination. Orano uses continuous RnP detectors with warning lights to monitor and warn workers of elevated RnP levels in work areas. Orano routinely performs radiation dose rate surveys, contamination monitoring and in-plant air monitoring, to confirm that workers' radiation exposures are kept ALARA. Radiological monitoring results confirm the effectiveness of contamination control procedures and include a combination of direct and indirect contamination monitoring of eating areas, footwear, work clothing and personal protective equipment (PPE). Routine airborne monitoring programs have been established and implemented for LLRD, RnP and RnG .

CNSC staff are satisfied that radiological hazards have been adequately controlled at the MLO over the current licence period.

3.7.3 Summary

A summary of the licensee's past performance, challenges, and proposed improvements are presented in the following subsections.

3.7.3.1 Past Performance

In 2017, 2020 and 2025, 3 focused RP inspections were conducted at the MLO during the licence period. In addition, some general inspections also included radiation protection criteria. Overall, inspection findings have confirmed ongoing compliance with the RPR. All non-compliances identified by CNSC staff (e.g., contamination control documentation; demonstrate adequacy of the Trimet instrument as a replacement for the Ludlum instrument; tracking instrument availability; RP instrument calibration; review and update the documentation associated with contamination control measures; RP warning signs; boot boys operation for contamination control; unattended class 7 radioactive package) were of low safety significance. CNSC staff have verified that Orano has taken appropriate corrective actions, and these non-compliances are now closed.

Based on the review of quarterly radiation exposure reports, annual compliance reports and CNSC staff's routine compliance verification activities, CNSC staff assess the performance for the RP SCA at the MLO as fully satisfactory/satisfactory over the current licence period.

3.7.3.2 Regulatory Focus

CNSC staff will continue to monitor performance for the RP SCA through regulatory oversight activities including inspections and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation at the MLO.

3.7.3.3 Proposed Improvements

There are no other proposed improvements for the RP SCA.

3.7.4 Conclusion

Orano effectively implemented the RP program at the MLO over the current licence period. CNSC staff are satisfied with Orano's efforts in applying the ALARA principle to keep the doses to persons ALARA. Therefore, CNSC staff concluded that the overall performance for this SCA is satisfactory, and that Orano is qualified to carry out the authorized activities at the MLO in this SCA.

3.8 Conventional Health and Safety

The conventional health and safety SCA covers the implementation of a program to manage workplace safety hazards and to protect personnel and equipment.

The specific areas that comprise this SCA at the MLO addressed individually in this document are:

- performance
- practices
- awareness

3.8.1 Trends

The following table indicates the overall rating trends for the conventional health and safety SCA over the current licensing period:

TRENDS FOR CONVENTIONAL HEALTH AND SAFETY								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has acceptable conventional health and safety programs to identify and control risks at the MLO. CNSC staff monitor implementation of the programs to ensure protection of workers. Orano has been proactive in identifying and managing risks to improve health and safety performance. Orano's conventional health and safety programs and its implementation continue to improve, be effective and meet applicable regulatory requirements.								

3.8.2 Discussion

The CNSC requires licensees of uranium mines and mills to develop, implement and maintain effective safety programs, to promote a safe and healthy workplace for employees, and to minimize the incidence of occupational injuries and illnesses. The CNSC requires Orano to identify potential safety hazards, assess the associated risks, and implement the necessary materials, equipment, programs and procedures to effectively manage, control and minimize these risks at the MLO.

The occupational health and safety program at the MLO is comprised of several components designed for employees, visitors and contractors. This health and safety program has been developed to meet legislated requirements and internal standards. The programs include audits, inspections, training, incident reporting and tracking, objectives and targets, hazard identification, risk assessments, job hazard analysis, key performance indicators, and regular safety meetings.

Performance

A key performance measure for this SCA is the number of lost-time injuries (LTIs) that occur per year. An LTI is an injury that takes place at work, resulting in the worker being unable to return to work and carry out their duties for a period of time.

Table 8.1 shows the total number of LTIs that occurred, its frequency and severity and the total recordable incident rate during this licensing period at the MLO. CNSC staff reviewed the investigation reports and verified that corrective actions have been implemented to prevent recurrence. Since 2010, all LTIs have been reported to the Commission through CNSC staff's annual Uranium Mines and Mills Regulatory Oversight Report.

Table 8.1: LTIs, severity rate and frequency rate, 2017-2025

McClean Lake Operation									
Year	2017	2018	2019	2020	2021	2022	2023	2024	2025*
Number of LTIs ¹	0	1	3	2	3	3	3	2	1
Severity rate ²	67.8	4.8	48	42.8	49.8	28.6	64.8	48.6	28.7
Frequency rate ³	0.0	0.3	0.9	0.7	0.9	0.8	0.7	0.5	0.3
Total Recordable Incident Rate ⁴	1.4	0.75	3.15	2.7	5.6	2.9	2.7	2	2.5

¹ An injury that takes place at work and results in the worker being unable to return to work for a period of time.

² A measure of the total number of days lost to injury for every 200,000 person-hours worked at the facility.

Accident severity rate = $[(\text{\# of days lost in last 12 months}) / (\text{\# of hours worked in last 12 months})] \times 200,000$.

³ A measure of the number of LTIs for every 200,000 person-hours worked at the facility.

Accident frequency rate = $[(\text{\# of injuries in last 12 months}) / (\text{\# of hours worked in last 12 months})] \times 200,000$.

⁴ A measure of the number of fatalities, lost-time injuries, and other injuries requiring medical treatment for every 200,000 person-hours worked at the facility.

Recordable incident rate = $[(\text{\# incidents in last 12 months}) / \text{\# hours worked in last 12 months}] \times 200,000$.

*2025 values are based on the reporting data from January 1 to September 30, 2025, data.

For 2025, there was 1 LTI described as follows:

On September 12, 2025, work was underway on the Tailings Thickener Tank to conduct sandblasting, repairs, and tank refinishing. A temporary scaffold structure with hoarding was installed to control dust and ensure adequate ventilation. A contract worker was assigned Attendant (Safety Watch) duties and positioned on a permanent walkway above the tank, within the guardrails. The worker was monitoring coworkers below who were manually pulling ducting into the tank using a rope. The Attendant chose to assist by climbing over the guardrail to help lift the ducting. Although wearing fall arrest equipment, the worker was not properly tied off. The worker fell through an opening and landed approximately 13 feet below, 2 levels down.

Orano conducted an investigation and identified following probable causes:

- The worker performed tasks outside of their assigned Attendant (Safety Watch) responsibilities by assisting with the ducting lift. This required climbing over the guardrail and stepping onto the adjacent scaffold. Although wearing fall protection equipment and attempting to secure their lanyard to an anchor point, the connection was not properly engaged despite an audible “click.”
- The worker was not qualified or authorized to work from the scaffold. The scaffold had been erected as a temporary structure to support environmental controls (hoarding installation) and was not designed or approved as a work platform.

CNSC staff followed up with Orano and confirmed that the licensee implemented the following actions:

- Work activities were immediately suspended.
- The Emergency Response Team was activated to conduct the rescue.
- The injured worker was transported to the onsite Health Center for assessment and stabilization.
- The worker was subsequently transferred offsite for additional medical treatment.
- The worker was discharged from hospital the following day.

Work remained suspended pending development of a corrective action plan which includes the following measures:

- Construction of a fully assembled lifting well, including a properly designed and approved working platform scaffold
- Installation of a mechanical lifting aid (chain hoist) to eliminate manual lifting requirements

Orano implemented the following corrective actions:

- Implementation of a color-coded system (e.g., PPE, hardhat demarcation) to assist in the identification of job roles at the McClean Lake Operation.
- Revise Work Instruction 803-04 Safe Work Plan and associated Form 803-04-01 Safe Work Plan to be more prescriptive in the identification of task responsibility, relevant authorizations, and associated qualifications; and the addition of Supervisor/Project Manager daily sign off and review.
- Revise Work Instruction 580-04 Installing and Working with Scaffolding and Work Instruction 779-04 Use of Scaffolding to highlight the different stages of the scaffold build (e.g., build vs work platform scaffold). Create health and safety bulletin describing the revision to the work instructions to be distributed to all employees.
- Additionally, Orano initiated a safety stand down (both shifts) whereby all work onsite was paused. A message was provided to employees by the management that reinforced Orano's Pathway to Safety: Stop, Think, Act.

CNSC staff reviewed Orano's follow up report and are satisfied with the corrective actions implemented.

Inspections regarding conventional health and safety were also carried out by [Saskatchewan Ministry of Labour Relations and Workplace Safety](#) inspectors during the current licensing period. Inspection reports are shared between CNSC staff and Provincial counterparts; regular oversight is provided by CNSC staff as needed. Safety-related findings and incidents were properly investigated and corrected by Orano in a timely manner and the resulting reports were acceptable to the CNSC and Saskatchewan Ministry of Labour Relations and Workplace Safety.

Practices

In addition to the [NSCA](#) and its associated regulations, the MLO activities and operations must comply with applicable federal and provincial health and safety related acts and regulations. For example, [The Saskatchewan Employment Act](#) requires that Orano establish and maintain a joint occupational health and safety committee at the facility.

To ensure continued strong safety performance and ongoing improvement, Orano's conventional health and safety program at the MLO include the following elements:

- scheduled safety orientation and training
- five-point daily safety cards
- work permits for specialized work
- planned inspection program
- occupational health committees
- health centre operation

- incident investigations and corrective action performance tracking
- contractor safety management
- hazard registry
- management of change
- regular safety meetings

CNSC staff have observed and verified safety practices during compliance inspections. The conventional health and safety SCA is included as a component in many CNSC inspections. Orano reported safety events in a timely manner and in compliance with the regulations for the MLO.

Risk assessments are used to compile a list of safety and health hazards and controls. The list of safety and health hazards and its controls is routinely reviewed and updated to reflect continual improvement and changes at the MLO.

Orano uses leading key performance indicators (training compliance, job task observation compliance, etc.) to monitor preventative efforts. Health and safety objectives are developed based upon review of the hazards, reviews of investigation and inspection reports and reviews of five-point safety cards. The Five-point Safety System is used to help ensure workers are prepared to perform assigned tasks safely and in a healthy manner by providing information and guidance to assess the workplace, verify equipment readiness, and confirm worker preparedness. Contractor safety risk continues to be effectively managed. Contractors are expected to follow Orano's safety program or have an equivalent program. Contractors are required to comply with applicable program requirements and regulations, manage hazards and controls associated with their work, and implement a health and safety program for their workers.

To support effective work planning and risk mitigation, both general and high-hazard-specific procedures are in place. Some specific high-hazard work procedures include confined space entry, hot work permit, lockout/tag-out, working in hot environments and respiratory protection.

All new employees, contractors or service representatives arriving at the MLO receive orientation. This orientation covers general site rules and provides the workers and visitors with the required information to work safely at the facility.

CNSC staff concluded that Orano is compliant with regulatory requirements and that its health and safety practices at the MLO are satisfactory.

Awareness

Orano has established conventional health and safety policies and programs for the MLO to ensure the protection of workers from physical, chemical and radiation hazards that may arise in the course of their work at the facility. Orano has developed and continues to deliver safety-related training to employees and contractors. This encompasses the safety areas of general health and safety knowledge, radiation protection, fire protection, regulatory requirements and job/task-specific safety training related to hot work permit, control of hazardous energy (lock-out/tag-out), and the use of a Workplace Hazardous Materials Information System which provides information on the safe use of hazardous materials.

Weekly safety meetings are conducted by each MLO department to discuss various safety topics; this may include safety target updates, review of recent incidents, safety concerns, and safety procedures for specific tasks. Employees are expected to report all incidents to their supervisors. Incidents are investigated by Orano's safety group, with the assistance of supervisors and those involved with the incident. The purpose is to determine the root causes and to implement preventive measures as required. The MLO industrial hygienist also conducts monitoring to evaluate potential chemical, physical, biological and ergonomic hazards.

Orano's integrated safety, health, environment and quality management system requires that both Orano corporate and site senior management review their respective safety and health management program at scheduled intervals to ensure the program's continuing suitability, adequacy, effectiveness, and sustainability.

3.8.3 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.8.3.1 Past Performance

Through the review of occupational health and safety documentation, site conditions and practices during the licence period, CNSC staff concluded that Orano's occupational health and safety program at the MLO meets CNSC regulatory requirements.

For the current licence period, CNSC staff rated Orano's overall performance for the conventional health and safety SCA as satisfactory.

3.8.3.2 Regulatory Focus

CNSC staff completed 2 focused conventional health and safety inspections at the MLO during the current licence period. The conventional health and safety criteria were also included in many general inspections conducted by CNSC staff at the MLO. All non-compliances identified by CNSC staff (e.g., cleaning of oil slicks; emergency eyewash and shower station inspections; checking for all long-term or permanently locked out tags; stairs, stairways, ladders and platforms are clear for safe access and egress; posted Flagging Tags are current and properly filled out; mill products and storage containers are labelled properly) were of low safety significance and have been adequately addressed.

CNSC staff will continue to monitor performance in this area through regulatory oversight activities including inspections and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation pertaining to this SCA.

3.8.3.3 Proposed Improvements

There are no proposed improvements for this SCA.

3.8.4 Conclusion

CNSC staff concluded that Orano has effectively managed workplace safety hazards at the MLO. Compliance verification activities will continue to be conducted at the facility to confirm that Orano's MLO continues to view conventional health and safety as an important consideration.

Orano's conventional health and safety program and implementation continue to be effective, meet applicable regulatory requirements, and is rated as satisfactory.

3.9 Environmental Protection

The environmental protection SCA covers programs that identify, control, and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities or as the result of licensed activities.

The specific areas that comprise this SCA include:

- environmental risk assessment
- effluent and emissions control (releases)
- assessment and monitoring
- protection of people
- environmental management system (EMS)

3.9.1 Trends

The following table indicates the overall rating trends for the environmental protection SCA over the current licensing period:

TRENDS FOR ENVIRONMENTAL PROTECTION								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has implemented, maintained and continuously improved its environmental protection programs at the MLO that protects the environment and the public in accordance with CNSC regulatory requirements. During the current licence period, releases to the environment were generally well below the release limits specified in the CNSC licence. CNSC staff monitor Orano's implementation of the environmental protection program through compliance verification activities. Orano updated its Environmental Risk Assessment (ERA) for the MLO as part of its Environmental Performance (EP) Technical Information Document (TID) Volume 2 and submitted to the CNSC in December 2025 [7]. CNSC staff's technical review of the 2025 ERA update is ongoing at this time.								

3.9.2 Discussion

Under the UMMR, Orano's MLO is required to develop and implement environmental protection policies, programs and associated procedures that comply with all applicable federal and provincial regulatory requirements, in order to control the release of nuclear and hazardous substances into the environment, and to protect the environment and human health. Listed below are the environmental protection regulatory documents and standards that Orano must implement under its licence for the proposed licence period.

Orano has implemented the requirements of:

- CSA N288.0-22, *Environmental management of nuclear facilities: Common requirements of the CSA N288 series of Standards*
- CSA N288.4-19, *Environmental monitoring programs at nuclear facilities and uranium mines and mills*

- CSA N288.5-22, *Effluent and emissions monitoring programs at nuclear facilities*
- CSA N288.6-22, *Environmental risk assessments at nuclear facilities and uranium mines and mills*
- CSA N288.7-23, *Groundwater protection and monitoring programs for nuclear facilities and uranium mines and mills*
- CSA N288.8-17, *Establishing and implementing action levels for releases to the environment from nuclear facilities*
- CNSC's [REGDOC-2.9.1, Environmental Protection: Environmental Principles, Assessments and Protection Measures](#).

Orano has committed to implement [REGDOC-2.9.2, Environmental Protection: Controlling Releases to the Environment](#) by October 1, 2026.

During the current licence period, CNSC staff verified Orano's performance with respect to environmental protection through inspections and desktop reviews.

Environmental Risk Assessment

REGDOC-2.9.1 requires the licensee to submit an environmental risk assessment (ERA) conducted in accordance with CSA N288.6 every 5 years or when a project moves to a new lifecycle phase. An ERA is a systematic process used by licensees to identify, quantify, and characterize the potential risks posed by radiological and non-radiological hazardous substances, as well as physical stressors in the environment on human and other biological receptors. This includes the magnitude and extent of the potential effects associated with an existing and/or proposed facility. Risks to human receptors are assessed through a human health risk assessment (HHRA) and ecological receptors are addressed through an ecological risk assessment (EcoRA).

An ERA can be predictive, retrospective, or include elements of both. The ERA serves as the basis for the development of site-specific environmental protection measures and as the tool to determine whether the facility's environmental protection measures are effective. The environmental monitoring data, in turn, provide further updates to refine ERA conclusions.

In December 2025, Orano submitted its 2025 EP TID Volume 2 for the MLO. Updates to this EP TID Volume 2 is required on a 5-year cycle and includes an Environmental Risk Assessment (ERA). Orano's previous EP TID Volume 2 was submitted in 2016. In the 2017 Record of Decision, the Commission advised Orano and CNSC staff to align future environmental reviews and analysis with the 10-year licence period [4]. As such, in 2020, Orano proposed an approach to CNSC staff to update the EP TID Volume 2 in 2025 rather than in 2021 to align with the CNSC licence renewal hearing in 2027. Until then, Orano committed to enhanced reporting, in accordance with CSA standard N288.6, within its annual compliance reports to meet CNSC requirements. This includes

examining and updating the ERA and assessing whether annual monitoring results remain consistent with those predicted in the 2016 ERA, thereby identifying any contaminants of potential concern that may warrant updates to associated risk assessments. Orano provided “adequacy reviews” against CSA N288.6 in each of its Annual Compliance Reports between 2020 and 2024, which CNSC staff reviewed.

The 2025 ERA includes updated air dispersion and effluent/wastewater modelling. It provides refined predictions of future site performance and replaces the EP TID Volume 2 (2016) and the Selenium Review and Risk Assessment Report (2018), previously submitted to the CNSC. The purpose of the 2025 EP TID Volume 2 was to provide a comparative basis to evaluate predicted future performance relative to previous EA predictions based on the current anticipated mining and milling plan for the MLO.

Orano’s 2025 ERA update was completed in accordance with the most recent version (2022) of the CSA standard N288.6-22 *Environmental risk assessment at nuclear facilities and uranium mines and mills* and included an HHRA and EcoRA. According to Orano’s 2025 ERA update, it was concluded that the predicted ecological and human health risks due to releases to air and water from the MLO remain well-controlled and remain generally consistent with the findings of previous environmental assessments and ERAs. Orano will be required to continue with environmental monitoring and targeted studies to ensure environmental protection and regulatory compliance throughout the operational lifecycle of MLO.

CNSC staff’s technical review of the 2025 ERA update was completed in April 2026 and comments were provided to Orano. The review and acceptance of a document of this size and scope typically takes about 1 year. CNSC staff will determine whether conclusions made regarding risks to ecological and human receptors have remained unchanged since Orano’s previous 2016 ERA submission, and that the conclusions are still valid and that the public and the environment will remain protected.

Effluent and emissions control (releases)

At the MLO, there are 2 regulated water treatment plants (WTP) that discharge treated effluent to the environment:

- The mill effluent is processed at the JEB WTP with a treatment system of chemical precipitation and liquid/solid separation and treated water released to the Sink/Vulture Treated Effluent Management System (S/V TEMS).
- Effluent from the mined-out open pits to maintain hydraulic containment of groundwater is treated in the Sue WTP using a chemical precipitation and settling pond clarification process before being released to the S/V TEMS.

The S/V TEMS controls the release of effluent from the MLO to the environment. The S/V TEMS is operated in accordance with the requirements in the environmental code of practice so that the impact of the volume discharged to McClean Lake east basin and to Collins Creek is minimized.

The CNSC has adopted licensed release limits for the MLO from the [*Metal and Diamond Mining Effluent Regulations*](#) (MDMER). These release limits are specified in the LCH for the MLO. The CNSC also requires that Orano meet the provincial limits for selenium and uranium, which are stipulated in [*Saskatchewan Ministry of Environment*](#) (SMOE) issued approvals to operate and within [*The Mineral Industry Environmental Protection Regulations, 1996*](#), respectively. Orano must also demonstrate the principles of ALARA and Best Available Technology Economically Available as per [*REGDOC-2.9.1, Environmental Protection: Environmental Principles, Assessments and Protection Measures*](#) at the MLO. The CNSC requirements result in effluent releases substantially lower than those authorized by the province of Saskatchewan.

The CNSC has an interim objective for uranium in effluent of 0.1 mg/L for liquid effluent. The CNSC uses the interim objective to assess the performance of a licensee's effluent monitoring program with respect to uranium. This value is based on a 2006 report on uranium treatment technologies, practices and performance levels within the uranium mining and milling sector. The interim objective has served as a regulatory tool to decrease uranium concentrations in mine/mill effluent below those considered of environmental concern. As presented in table 3.9.2.1, the uranium concentrations in effluent from MLO are consistently below the objective.

The annual monthly mean concentrations and associated licence limits for the treated effluent are provided in table 3.9.2.1. Releases have been substantially lower than the licence limits throughout the current licence period.

Table 3.9.2.1: Annual monthly mean concentrations of treated effluent released to the environment at MLO, 2017-2025*

Year	Limits	Interim Objective	2017	2018	2019	2020	2021	2022	2023	2024	2025*
As	0.3 ⁵	N/A	0.021	0.030	0.058	0.052	0.0414	0.0521	0.0457	0.0196	0.0299
Cu	0.3 ⁴	N/A	0.003	0.003	0.002	0.002	0.002	0.002	0.003	0.002	0.003
Pb	0.1 ⁵	N/A	< 0.001	0.0028	0.0006	0.0005	0.0005	0.0006	0.0005	0.0005	0.0005
Ni	0.5 ⁴	N/A	0.023	0.013	0.015	0.0160	0.0161	0.0180	0.0202	0.0240	0.0147
Zn	0.5 ⁴	N/A	0.01	0.003	0.003	0.004	0.002	0.002	0.003	0.002	0.001
TSS	15 ⁴	N/A	1	2	2	1	2	2	3	2	3
Ui-NH3	0.5 ⁶	N/A	N/A	N/A	N/A	N/A	0.02	0.04	0.06	0.05	0.05
Ra ²²⁶	0.37 ⁴	N/A	0.005	0.006	0.006	0.010	0.010	0.014	0.010	0.010	0.010
pH ¹	6.0-9.5 ⁴	N/A	7.22	7.15	7.17	7.14	7.10	7.13	7.15	7.14	7.21
Se	0.6 ³	N/A	0.01	0.021	0.037	0.042	0.0211	0.0139	0.0161	0.0055	0.01
U	2.5 ³	0.1	0.003	0.007	0.005	0.005	0.0098	0.0050	0.0052	0.0033	0.0047
Mo ²	N/A	N/A	0.004	0.003	0.002	0.002	0.003	0.006	0.014	0.005	0.007

* 2025 reporting period is January 1, 2025, to September 30, 2025.

1 pH taken from daily discharge samples – not measured in monthly composite samples. **2** No provincial or federal limit is available. Level of molybdenum in treated effluent meets the federal water quality guidelines and are below the action level. **3** Provincial limits. **4** Limits as identified in the MDMER. **5** Limit as identified in the MDMER. Limit revised (lowered to value shown) on June 1, 2021. **6** Un-ionized ammonia added to MDMER limits as of June 1, 2021

The effluent discharge is also subject to regular toxicity testing as required by the [MDMER](#) and to the action levels specified within the MLO environmental code of practice. Action levels provide early indication of a potential loss of control of part of the environmental protection program. Thus, action levels are used to ensure that the licence release limits will not be exceeded. Action levels for the MLO are derived in accordance with CSA standard N288.8-17. In 2021, Orano reviewed and updated its action levels using recent effluent monitoring data.

At the MLO, the treated effluent is pumped to a monitoring pond, and a sample is collected as the pond is filled. The treated effluent is released in a controlled batch manner if the lab results show that the concentrations of contaminants are lower than action levels and licence limits.

Action level and discharge limit exceedances

Throughout the current licensing period, monitoring has verified that effluent from the MLO is not anticipated to pose an environmental concern. The effluent contaminant concentrations were maintained below the effluent discharge limits except for some exceedances which are detailed below. The effluent discharge from the MLO was not acutely lethal and met the requirements in the MDMER throughout the current licensing period. There were some effluent action level exceedances during the current licensing period as explained below. Furthermore, all the average annual concentrations of parameters are within the predictions in the 2016 ERA, and 2018 Selenium Review and Risk Assessment. CNSC staff confirmed that the operation of the JEB and Sue WTPs complied with all regulatory requirements during the current licensing period and that the effluent releases from MLO are protective of the environment.

The total suspended solids (TSS) MDMER limit of 22.5 mg/L was exceeded in March 2018, June 2021, February 2022, August 2023, and on 2 occasions in September 2023. Orano completed an investigation in response to each event. All these exceedances were not representative of the actual effluent released to the environment because the corresponding pond routing samples were below the action level for TSS. Additionally, grab samples collected from the monitoring ponds at the time of discharge were below the established TSS action level. Overall, the exceedances were determined to result from either improper sampling procedures or solids that had accumulated in the sampling line contaminating the sample. In response to the February 2022 event, Orano has taken corrective actions to reduce the likelihood of sample contamination, including replacing the sampling vat and tubing on a monthly basis and flushing the sampling port when the tubing and vat are replaced.

In August 2019 and July 2022, there was a TSS action level exceedance. Orano performed an investigation after each event and concluded that the action level exceedance was caused by sample contamination. CNSC staff reviewed Orano's 21-day follow-up report and are satisfied with the corrective actions implemented.

In July 2023, the 24-hour effluent discharge composite sample from the JEB WTP had a pH of 3.76 which is lower than the MDMER limit (<6.0). The concentration of TSS was 16 mg/L, which exceeded the action level of 15 mg/L but was below the MDMER limit of 22.5 mg/L. The total volume of treated effluent discharged to Sink Reservoir was 1,599 m³. In July 2023, the 24-hour effluent discharge composite sample from the JEB WTP exceeded the action Level for pH (>8.5) with a pH value of 8.52, and the action level for un-ionized ammonia (>0.45 mg/L) with a concentration of 0.69 mg/L. The total volume of treated effluent discharged to Sink Reservoir was 535 m³. After discovery of each event, the discharge was immediately stopped, the pond was recycled back to the JEB TMF, and the CNSC and SMOE were notified.

Orano performed an investigation in response to these 2 events and implemented corrective actions. Orano also collected an acute lethality sample 2 days after the incident from the Sink Reservoir sampling location. The sample results indicate that the effluent was not acutely lethal. CNSC staff reviewed Orano's 21-day follow-up report and are satisfied with the corrective actions implemented.

In June 2022, there was an un-ionized ammonia action level exceedance. Upon discovery, the discharge was immediately stopped, the pond was recycled back to the JEB TMF, and the CNSC was notified. The volume of treated effluent released to Sink Reservoir was 208 m³. The effluent action level for un-ionized ammonia is 0.45 mg/L and the pond routing sample result was 0.60 mg/L. Orano conducted an investigation and implemented corrective actions, including reviewing discharge procedures with all site groups involved. CNSC staff reviewed Orano's 21-day follow-up report and are satisfied with the corrective actions implemented.

Twice in March 2020 and once in April 2020, there were exceedances of the interim selenium action level of 0.078 mg/L. The selenium concentrations were 0.084 mg/L, 0.081 mg/L, and 0.085 mg/L respectively. Orano's corrective actions in response to these events are provided in the next section.

Uranium, molybdenum and selenium in effluent

Selenium concentrations in the JEB WTP effluent have been the subject of CNSC regulatory attention since 2016, when Orano proactively identified the probability of increased selenium concentrations in the effluent due to the processing of Cigar Lake ore at the MLO. The 2016 ERA indicated potential risks to aquatic and terrestrial biota from selenium. Following this, the CNSC placed the MLO under adaptive management and asked Orano to decrease selenium discharges. In response, Orano provided a selenium adaptive management plan detailing the measures implemented to control selenium releases in the short term. Measures included substantial optimization of process controls, establishment of an interim action level and an exposure-based release limit for selenium, comprehensive risk assessments of selenium's impacts on aquatic biota, and strengthened environmental monitoring of aquatic species downstream of the MLO. In March and April 2020, there were 3 exceedances of the interim action level for selenium. As a result, in addition to the implementation of short-term measures, CNSC staff asked Orano to propose a long-term solution for the reduction of selenium loadings to the environment. In response, Orano updated its selenium adaptive management plan, in which they proposed to install a ferrous sulphate treatment system to treat selenium. Orano also implemented further process optimization techniques to lower selenium in effluent.

Orano upgraded the JEB WTP with a ferrous sulphate system in June 2022 to improve selenium removal. The final commissioning stage has been delayed as of September

2025 due to low selenium levels in the feed, which are needed for effective treatment. In September 2024, Orano provided an update to its selenium risk assessment. In the submission, Orano revised the selenium forecast and refined its selenium model. Orano concluded that there are no significant risks to the downstream environment due to selenium loadings under the McClean Lake mill production rate of up to 18 million pounds U_3O_8 equivalent per year. This information has also been incorporated in the 2025 ERA update. CNSC staff are currently reviewing the updated 2025 selenium risk assessment as part of the ERA update, which provides a more fulsome assessment of risk to various aquatic and terrestrial receptors than the 2024 assessment. CNSC staff are satisfied that Orano's taking appropriate measures to understand and mitigate potential risks of selenium to the downstream environment.

In addition to the selenium, uranium releases from the uranium mines and mills have also been subject of CNSC regulatory attention since the mid 2000s, when uranium was added to the second Priority Substances List (PSL2) of the *Canadian Environmental Protection Act* (CEPA). Molybdenum releases were also brought into increased regulatory oversight as a result of risks identified to riparian wildlife, such as muskrat and moose. CNSC staff reviewed the molybdenum and uranium in effluent data from the JEB WTP and noted that they remained relatively stable during the current licensing period. CNSC staff are satisfied that Orano is taking the appropriate measures to effectively control and reduce uranium, molybdenum and selenium in effluent.

Uncontrolled releases

A listing of the uncontrolled releases (spills) to the environment at the MLO are listed in table 3.9.2.2.

Table 3.9.2.2: Number of spills at MLO, 2017-2025

McClean Lake Operation									
Year	2017	2018	2019	2020	2021	2022	2023	2024	2025*
Number of spills	2	4	0	4	3	2	2	1	2

* The 2025 reporting period is January 1, 2025, to September 30, 2025.

Complete listings and description of each of the uncontrolled releases (spills) to the environment are included in RORs which are available on the CNSC's [website](#). CNSC staff reviewed the spills and determined that they are classified as low safety significance. In addition, all corrective actions related to these spills have been accepted by CNSC staff and implemented by Orano.

Assessment and monitoring

The core activity of the environmental management program (EMP) is to acquire data for assessing impacts on the environment from the operation and ensuring that possible impacts are detected as early as possible and mitigated. The environmental monitoring requirements of the EMP provide details about monitoring locations, frequencies and environmental parameters to be measured. The MLO EMP demonstrates that the site emissions and effluent discharge of nuclear and hazardous substances are properly controlled. Key components of the EMP are air quality, surface water hydrology, water quality, terrestrial monitoring, aquatic monitoring, and groundwater monitoring.

The data collected under the EMPs are compared with predictions in Orano's ERA to confirm that there is minimal risk to the environment and human health from site emissions and effluent discharge.

Air monitoring

Air quality is monitored through ambient air quality near MLO and indirectly through measurements of metal accumulations in the terrestrial environment. Orano implements a comprehensive air quality monitoring program that includes monitoring of ambient radon, ambient sulphur dioxide, acid precipitation, and total suspended particulates (TSP).

Ambient radon

Environmental monitoring for radon concentrations is conducted using the passive method of track-etch cups that are changed out semi-annually. Sampling locations are based on air dispersion modelling assessments and are located around McClean Lake, the JEB site, the Sue site, and reference stations. The radon monitoring results during the current licensing period show that the radon concentrations in the ambient environment were low and often within the typical northern Saskatchewan regional background levels of 7.4 Bq/m³ to 25 Bq/m³. Concentrations that are higher than the background levels were mostly located near the ore stockpiles. This is an open area and since radon emissions dissipate rapidly, there is no significant hazard to the environment or to personnel working in the area.

Ambient sulphur dioxide

Orano conducts ambient sulphur dioxide monitoring on a continuous basis at a monitoring location located about 200 metres downwind of the mill. This location is in the prevailing wind direction. The ambient sulphur dioxide results during the current licensing period show that the annual average 24-hour sulphur dioxide concentrations were comparable to the 2016 ERA predictions. Therefore, CNSC staff concluded that ambient sulphur dioxide remains at levels protective of human health and the environment.

Total suspended particulates (TSP)

Orano conducts monitoring of ambient air using high-volume air samplers to measure ambient levels of atmospheric TSP and its adsorbed constituents of potential concerns (COPCs). Orano collects 1 24-hour total suspended particulate sample per week at each of the 5 monitoring locations and analyzes composite samples from each station every quarter for adsorbed COPCs. The results during the current licensing period show that concentrations of TSP remained within the 2016 ERA predictions, with the exception of 1 monitoring location where elevated levels of TSPs were attributed to forest fire smoke. Concentrations of most adsorbed COPCs remained within the 2016 ERA predictions with copper and molybdenum exceeding predicted levels but remained well below applicable air quality guidelines. Therefore, CNSC staff concluded that ambient air quality remains at levels protective of human health and the environment.

Acid precipitation monitoring

Orano conducts acid precipitation monitoring to evaluate whether there are any changes to the environment caused by acidic compounds produced and released as a result of anthropogenic activities, including air emissions from the MLO. Precipitation samples are collected and analyzed monthly at the weather station located southeast of the mill. The results during the current licensing period were within the range of historical averages at the site since the year 2000. The results also demonstrated that there was no evident impact from MLO on the acidity of precipitation.

Terrestrial monitoring

Orano conducts terrestrial vegetation and soil chemistry monitoring to assess contaminant levels in soil and plants due to airborne exposure from activities at the MLO. Orano executes terrestrial monitoring every 6 years in accordance with its EMP. The last terrestrial monitoring sampling campaign was done in 2021.

Soil monitoring

The 2021 results for soil samples show that concentrations in soil metal parameters were below available Canadian Environmental Quality Guidelines (CEQG) for residential/parkland land use, except for pH, which was below the Ceqg range in both reference and exposure sampling areas. This indicates that soil is slightly acidic in the area. Therefore, CNSC staff found that the concentrations of COPCs in soil surrounding the MLO remain below applicable guidelines and likely do not pose an unreasonable risk to ecological receptors in the vicinity of the facility.

Labrador tea and blueberries

The 2021 results for labrador tea and blueberry samples show that there were no notable differences in the concentrations of COPCs between reference and exposure

areas. The levels were also generally similar between the 2015 and 2021 monitoring periods. Therefore, CNSC staff found that the concentrations of COPCs in labrador tea and blueberry surrounding the MLO are within a reasonable range and likely do not pose an unreasonable risk to ecological receptors in the vicinity of the facility.

Lichen

Lichen samples are analyzed to determine the level of airborne particulate contaminants deposited on the surface of the lichen as a means of ensuring that a significant level of contamination is not entering lichen consumers, such as caribou. The 2021 results for lichen show that most COPCs were within the range of values measured in previous operational monitoring years with the study area. The levels of COPCs in lichen remained well below the mean and 95th percentile predictions from the 2016 ERA Base Case Scenario for the MLO local study area. Therefore, CNSC staff found that the concentrations of COPCs in lichen surrounding the MLO are within a reasonable range and likely do not pose an unreasonable risk to ecological receptors in the vicinity of the facility.

Groundwater monitoring

Orano conducts an extensive groundwater monitoring program that includes measurement of hydraulic head values and collection of water samples at groundwater monitoring wells located at the MLO local study area. With respect to groundwater quality, Orano's data analyses focused on a select list of COPCs identified as most relevant to each site (i.e., JEB, Sue, Moffat Domestic Landfill, and McClean Mining) in the study area separately based on site-specific conditions and study objectives.

Monitoring data are used to verify the maintaining of hydraulic containment of the JEB TMF and the Sue Pits, and to evaluate potential influence from other facilities such as the Clean Waste Rock Piles, ore pads, landfills, and fuel farm. Monitoring data have also supported updates to the regional and local (JEB/Sue) groundwater flow models, improving the understanding of the hydrogeological conditions and enhancing the future predictions of groundwater response to mining activities and long-term solute transport.

CNSC staff reviewed the groundwater conditions and monitoring results at the MLO for the 2017 to 2024 reporting period and concluded that the hydrogeological environment remains protected from radiological and hazardous releases from the MLO.

Surface water monitoring

Surface water quality at the MLO is influenced by the release of treated effluent into the Collins Creek drainage. Orano conducts an extensive water quality monitoring program within the primary exposure area, which includes the S/V TEMS and Vulture Lake on quarterly basis whereas McClean Lake east basin and Keweenaw Lake are on monthly basis. The samples are analyzed for physical properties, nutrients, inorganic ions, metals, and radionuclides. Orano also conducts sampling in the secondary exposure areas located within the Collins Creek and Moffat Creek drainages. The secondary exposure areas are sampled because they can be affected by changes in the groundwater regime or by atmospheric emissions associated with the mining and milling operations.

During the current licensing period, the surface water monitoring results indicate that most parameters were below available guidelines and radionuclide activity levels were mostly below or close to the detection limit in McClean Lake East Basin and the downstream monitoring locations. As the S/V TEMS is designated as a treated effluent management system, there is no requirement for water and sediment quality to meet environmental quality guidelines in the Sink Reservoir or Vulture Lake. Most of the concentrations of COPCs did not exceed the 2016 or 2018 ERAs maximum annual mean or the 95th percentile ERA predicted levels for each waterbody. When there were exceedances of the predictions, they either occurred briefly, they were not consistent across all primary exposure areas, or they were caused by the detection limit being higher than the prediction.

The recent results of the surface water monitoring program remain within the predicted ranges from the 2016 ERA and 2018 Selenium Review and Risk Assessment. Therefore, CNSC staff anticipate that there is no unreasonable risk to the aquatic environment from radiological and hazardous releases from the MLO.

Environmental effects monitoring

Environmental effects monitoring (EEM) at Saskatchewan uranium mines and mills is necessary to meet the requirements of the MDMER as well as any additional requirements from CNSC and SMOE. The purpose of the EEM program is to evaluate the potential effects of effluent on fish and fish habitat through the analyses of benthic invertebrate community, fish population, and fish tissue chemistry data.

Orano's Phase 7 of its EEM program took place in the fall of 2022. CNSC staff reviewed the Phase 7 EEM Interpretative Report and concluded that Orano has met the EEM requirements and that the environment in the vicinity of the MLO remains protected. Phase 8 of its EEM program took place in the fall of 2025, and the Interpretative Report will be submitted in June 2026.

CNSC Independent Environmental Monitoring Program

The CNSC has implemented its Independent Environmental Monitoring Program (IEMP) to build Indigenous and public trust in the CNSC's regulation of the nuclear industry, via an independent, technical and accessible environmental sampling program around nuclear facilities. It is separate from, but complementary to, the CNSC's ongoing compliance verification program. The IEMP involves taking samples from publicly accessible areas around licensed facilities and measuring and analyzing the amount of radiological (nuclear) and hazardous contaminant substances in those samples. In 2025, samples of surface water, fish (lake whitefish and northern pike), Labrador tea, blueberries, and porcupine were collected in publicly accessible exposure and reference locations in the vicinity of the MLO.

Similar to previous IEMP campaigns in northern Saskatchewan, CNSC staff developed a sampling plan in consultation with interested Indigenous Nations and communities. CNSC staff sent the draft sampling plan to the Ya'thi Néné Land and Resource Office (YNLRO). YNLRO interviewed community members from Wollaston and Black Lake and provided some suggestions. CNSC staff incorporated their suggestions in the final sampling plan, including adding surface water sampling locations at Collins Creek downstream of Highway 905, Telephone Lake, and Sharp Lake. A community land technician from YNLRO participated in the sampling campaign by helping to collect samples. During the sampling campaign, a local community member provided a porcupine flesh sample.

Similar to previous IEMP campaigns in northern Saskatchewan, CNSC staff contracted CanNorth Environmental Services, an Indigenous-owned northern Saskatchewan contractor, to collect the samples. The samples were analyzed for radionuclides, including radium-226, thorium-230, polonium-210, lead-210, and hazardous substances including arsenic, copper, lead, molybdenum, nickel, selenium, uranium, and zinc. These parameters were chosen because they had the most regulatory and public interest based on operations at the MLO. The samples were analyzed by an accredited laboratory.

The results are posted on the CNSC's [IEMP web page](#). The IEMP results from 2025 and 2016 (last IEMP campaign) are consistent with the results submitted by Orano, supporting CNSC staff's assessment that Orano's environmental protection program is effective. The results add to the body of evidence that people and the environment in the vicinity of MLO are protected and that there are no anticipated health impacts from the operation of the facility.

Protection of people

Orano is required to demonstrate that the health and safety of the public and Indigenous Nations and communities are protected from exposures to hazardous and nuclear substances released from the MLO. The effluent and environmental monitoring programs currently conducted by Orano at the MLO are used to confirm that releases of hazardous substances do not result in environmental concentrations that may affect public health.

CNSC receives reports of discharges to the environment through the reporting requirements outlined in the MLO LCH. CNSC staff's review of discharges to the environment confirmed that these releases are below regulatory limits and are within those predicted in the environmental assessments and environmental risk assessments, which concluded negligible risks to the environment, the public and Indigenous Nations and communities.

Human Health Risk Assessment

Orano's 2025 EP TID Volume 2 for the MLO included an HHRA. Atmospheric and aquatic emissions from the MLO were used to predict doses and intakes to human receptors in the study area. The HHRA considered several human receptor groups/locations based on plausible scenarios of people working and/or living near the MLO. Consumption of Traditional Foods was considered for the human receptor groups. These receptor groups were similar to those assessed previously in Orano's 2016 HHRA. The evaluation included exposure to radionuclides, non-carcinogens as well as carcinogens. The 2025 HHRA concluded that no adverse effects are expected on human health.

CNSC staff's review of Orano's 2025 HHRA for the MLO was completed in April 2026 and comments were provided to Orano. CNSC staff will verify that the results are consistent with previously approved ERAs and that Orano has demonstrated that the environment and human health in the vicinity of the operation will remain protected.

Estimated dose to the public

Radiological releases to the environment are controlled and monitored by the effluent and emissions control, and the environmental monitoring programs. The [RPR](#) define prescribed dose limits for the protection of the public, and requires licensees to monitor by direct measurement or by estimation of the quantities and concentrations of any nuclear substance released as a result of a proposed activity.

Accordingly, a radiological human health risk assessment is completed as part of Orano's 2025 ERA. The predicted maximum incremental dose resulting from MLO was 0.15 mSv per year for a JEB camp worker. For the remaining human receptors assessed, the incremental doses were in the order of 0.005 to 0.010 µSv/year. CNSC staff reviewed Orano's assessment and concluded that public doses for all receptors are well below the

annual public dose limit of 1 mSv. Therefore, the public and the environment remain protected.

Environmental management system (EMS)

Orano has implemented and maintained an environmental management system (EMS) at the MLO to describe the activities associated with the protection of the environment. The EMS is described in the Integrated Quality Management System and includes programs for effluent and environmental monitoring. The EMS meets the requirements of the ISO 14001:2015 standard *Environmental Management System – Requirements with Guidance for Use* [8].

Orano conducts internal audits to determine whether the EMS has been properly implemented and is effective. Any deficiencies and findings that are identified from internal audits are documented and a plan is devised to address any non-conformance items. Orano verifies compliance of its EMS through annual management reviews where minutes and follow-up actions to outstanding issues from the internal audits are documented. Orano sets objectives, goals, and targets related to the environmental protection program every year. The status of these objectives, goals, and targets is evaluated, and the results are documented in the annual compliance report.

CNSC staff verify the effectiveness of the EMS through desktop reviews of annual compliance reports and inspections. CNSC staff confirmed that Orano's EMS is meeting expectations.

3.9.3 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.9.3.1 Past Performance

Orano has developed, implemented and maintained an effective environmental protection program at the MLO that protects the environment and the public in accordance with CNSC regulatory requirements. During the current licensing period, monitored releases to the environment were generally well below licence limits specified in the MLO LCH and in the provincial approvals. CNSC staff monitor implementation of the environmental protection program through compliance verification activities. CNSC staff rate Orano's overall performance at the MLO for this SCA as satisfactory for the current licence period.

3.9.3.2 Regulatory Focus

CNSC staff will continue to monitor performance in this area through regulatory oversight activities, inspections, and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation pertaining to this SCA. CNSC staff conducted 2 focused environmental protection inspections at the MLO during the current licence period. Environmental protection criteria were also included in other general inspections conducted by CNSC staff during the current licence period. All non-compliances identified by CNSC staff (e.g., magnehelic gauges on the calciner scrubber are clean; work instruction and procedure for surface water, climate and air monitoring align with current practice; repair puncture in monitoring pond B; assess vegetation growth within CX sludge pond and submit plan to CNSC to address vegetation growth; ensure analytical standards and buffer solutions used for environmental analyses are verified and replaced before expiry) were of low safety significance and have been adequately addressed.

The results of these inspections and desktop reviews allowed CNSC staff to conclude that Orano's implementation of the environmental protection programs at the MLO meets CNSC's regulatory requirements and expectations.

3.9.3.3 Proposed Improvements

Orano has committed to implementing REGDOC-2.9.2, *Environmental Protection: Controlling Releases to the Environment* by Q3 2026.

3.9.4 Conclusion

Orano has implemented and maintained environmental protection programs at the MLO that adequately protect the environment and the public in accordance with regulatory requirements.

CNSC staff's technical review of Orano's 2025 ERA update (EP TID Volume 2) was completed in April 2026 and comments were provided to Orano. CNSC staff will determine whether conclusions made regarding risks to ecological and human receptors have remained unchanged since Orano's previous 2016 ERA submission, and that the conclusions are still valid and that the public and the environment will remain protected.

In addition, CNSC staff have reviewed other lines of evidence related to environmental protection including Orano's environmental monitoring data provided in its annual and quarterly reports along with recent regional IEMP data and EARMP data. From this review, CNSC staff determined that Orano has and will continue to implement and

maintain effective environmental protection measures to adequately protect the environment and the health and safety of persons.

3.10 Emergency Management and Fire Protection

The emergency management and fire protection SCA covers emergency plans and emergency preparedness programs that exist for emergencies and for non-routine conditions.

This SCA also includes the requirement for Orano's MLO to have a comprehensive fire protection program to minimize the risk to the health and safety of persons and to the environment from fire; through appropriate fire protection system design, fire safety analysis, fire safe operation and fire prevention.

The specific areas that comprise this SCA at the MLO and addressed individually in this document are:

- emergency preparedness and response
- fire protection

3.10.1 Trends

The following table indicates the overall rating trends for the emergency management and fire protection SCA over the current licensing period:

TRENDS FOR EMERGENCY MANAGEMENT AND FIRE PROTECTION								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has acceptable emergency preparedness and response programs that meet CNSC regulatory and performance requirements at the MLO. Orano's fire protection program is in place to minimize both the probability of occurrence and the consequences of fire and meets CNSC regulatory requirements.								

3.10.2 Discussion

Emergency preparedness and response

Uranium mines and mills are required to have emergency plans in place for the protection of the health and safety of workers, the public and the environment. Orano's emergency response program and emergency response plan contain the necessary guidelines and responsibilities for MLO should an emergency occur. The plan identifies the onsite emergency response organization members and their duties and responsibilities for responding to emergencies. The plan also specifies the required equipment to be used in responding to such emergencies, maintenance of equipment and detailed response procedures. The emergency response plan addresses both general emergency response and firefighting response procedures.

As required by the CNSC and also by [The Mines Regulations, 2018](#), administered by [Saskatchewan Ministry of Labour Relations and Workplace Safety](#), Orano must train emergency response team (ERT) members. Orano utilizes classroom and field training as well as drills and exercises to ensure the preparedness of licensee personnel and the ERT. The knowledge and performance for the ERTs are tested during planned emergency exercises. Ongoing field training includes drills and exercises to ensure the preparedness of site personnel. To test specific skills, the teams are mobilized for events such as medical emergencies and transportation of ill or injured personnel, rescue drills, fire drills with search and rescue, ventilation and fire suppression activities. Also, Orano's teams train for, and regularly compete in industrial fire and response competitions.

CNSC staff verified Orano's implementation of its emergency response program at the MLO in accordance with CNSC regulatory requirements through inspections and desktop reviews during the current licence period.

Fire protection

Orano has a fire protection program in place at the MLO to minimize the probability of occurrence and the consequences of fire at the facility. The program has been established to comply with the requirements of the [National Building Code of Canada \(NBCC\) 2020](#) and the [National Fire Code of Canada \(NFCC\) 2020](#), subject to exclusions and/or amendments, as contained in Saskatchewan's *Codes Adoption (SCA) 2020*.

Orano maintains a Fire Safety Plan (FSP) at the MLO that outlines the facilities, systems, activities, and training in place to prevent fires, protect the health and safety of all personnel, and minimize damage to property and equipment. The FSP is a province of Saskatchewan requirement of the [Occupational Health and Safety Regulations](#) and the NFCC 2020.

The FSP provides information on specific responsibilities, emergency instructions in the event of a fire, training provided to personnel during orientation, execution of fire drills, description of how fire hazards are controlled and descriptions of specific fire hazards at the site. The FSP is reviewed annually at a minimum.

The maintenance, tests and inspections performed on the fire protection system at the MLO are designed to meet the requirements of the NBCC 2020 and the NFCC 2020, applicable *National Fire Protection Association* standards, provincial regulations and [Occupational Health and Safety Assessment Series \(OHSAS\):18001](#) standards. Orano utilizes a third-party consultant to review proposed projects with potential impact to fire protection. The third-party consultant evaluates the proposed change(s), assesses its potential fire hazards, appropriate fire protection system and features used to mitigate the fire hazards. These third-party reports were submitted to and reviewed by CNSC staff.

The objective of the fire hazard assessment (FHA) is to demonstrate that a comprehensive assessment has been made of the potential fires and that its impact on people, equipment, buildings and the environment are within acceptable limits. This was accomplished by demonstrating that the fire protection objective for a facility, as defined by the CNSC, can be met under foreseeable fire events.

An FHA was initiated and completed in 2015 by a third-party consultant for all existing JEB and Sue Site buildings at the MLO, along with a corrective action plan addressing the FHA recommendations. The FHA and corrective action plan were reviewed by CNSC staff and found to be acceptable. In September 2020, Orano submitted an updated FHA meeting the requirements of CSA N393:13 – Fire protection for facilities that process, handle, or store nuclear substances. Orano responded to CNSC staff comments and submitted a revised FHA in April 2022 to meet the requirements of CSA N393:13. Semi-annual updates were provided on the proposed corrective actions arising from the CSA N393:13 compliance review, and all corrective actions were completed in 2024.

3.10.3 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.10.3.1 Past Performance

Emergency preparedness program

Based on desktop reviews and inspections, CNSC staff concluded that Orano's emergency preparedness program continues to be satisfactory at the MLO. Orano continues to improve its emergency preparedness and response program, including

implementing lessons learned from exercises and drills. In addition, CNSC staff conducted an emergency preparedness focused inspection in September 2019. CNSC staff concluded that MLO personnel demonstrated the ability to adequately respond to an emergency while ensuring the safety and protection of onsite personnel, the public and the environment.

Fire protection program

Orano's MLO has an acceptable fire protection program in place to minimize both the probability of occurrence and the consequences of fire. The contents of the fire protection program contain elements that would be expected for a mine/mill facility and comply with the requirements of the NBCC 2020 and the NFCC 2020, subject to exclusions and/or amendments, as contained in Saskatchewan's Code Adoption 2020.

In conclusion, Orano's fire protection program and its implementation at the MLO continue to meet regulatory requirements.

3.10.3.2 Regulatory Focus

CNSC staff completed 1 focused emergency management and fire protection inspection at the MLO during the current licence period. Emergency management and fire protection criteria were also included in other general inspections conducted by CNSC staff at the MLO. All non-compliances identified (e.g., fire doors closing and free from obstructions; conduct gap analysis of current practices compared with CSA Group standard N393; unobstructed access to all fire extinguishers and emergency escape hoods/respirators; inspections of emergency equipment like fire extinguishers are performed within appropriate timelines) were of low safety significance and have been adequately addressed.

CNSC staff will continue to monitor performance in this area through regulatory oversight activities including inspections and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation pertaining to this SCA.

[Saskatchewan Ministry of Labour Relations and Workplace Safety](#), under its agreement with Employment and Social Development Canada and the CNSC, also conduct regular compliance inspections including fire protection. Inspection reports are shared between the CNSC and Saskatchewan Ministry of Labour Relations and Workplace Safety.

3.10.3.3 Proposed Improvements

Following the publication of CSA N393:22, the CNSC asked Orano to conduct a gap analysis and develop an implementation plan. Orano submitted the requested gap analysis and implementation plan, which also addressed requirements from NBCC 2020 and NFCC 2020. The analysis identified 17 applicable gaps and included 9 recommendations to achieve compliance: 6 related to CSA N393:22 and 3 related to NFCC 2020. Orano provided semi-annual updates and informed the CNSC in November 2025 that all corrective actions were completed. CNSC staff will verify implementation of the CSA N393:22 in future compliance inspections.

3.10.4 Conclusion

Based on desktop reviews and inspections, CNSC staff concluded the overall performance for this SCA is satisfactory and that Orano is qualified to carry out the authorized activities at the MLO in this SCA.

3.11 Waste Management

The waste management SCA covers internal waste-related programs that form part of the facility's operation up to the point where the waste is removed from the facility to a separate waste management facility or placed into long-term storage on site. This area also covers the planning for decommissioning.

The specific areas that comprise this SCA addressed individually in this document are:

- waste management facilities
- solid and liquid waste
- decommissioning plans

3.11.1 Trends

The following table indicates the overall rating trends for the waste management SCA over the current licensing period:

TRENDS FOR WASTE MANAGEMENT								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano's programs are adequate for the management of domestic, industrial and chemically/radiologically contaminated waste at the MLO. CNSC staff monitor Orano's implementation of this program through compliance verification activities. CNSC staff are satisfied with Orano's waste management program and its implementation. Orano's MLO has a valid PDP in place. In January 2025, Orano submitted a revised PDP and cost estimate for the MLO to meet the 5-year cycle requirement. CNSC staff have assessed the proposed revisions and concluded that the revised PDP, including the cost estimates supporting the financial guarantee, is acceptable. CNSC staff recommend that the Commission accept Orano's proposed financial guarantee in the amount of C\$122,557,378 for the MLO.								

3.11.2 Discussion

The CNSC requires licensees of uranium mines and mills to have a waste management program in place that covers the generation, transport, handling, processing, storage, and disposal of wastes resulting from licensed activities. The CNSC requires Orano to take all reasonable precautions for the safe management of waste to protect workers and the environment and to control releases of nuclear and hazardous substances.

Orano has implemented waste management programs to effectively control wastes generated and stored at the MLO. The objectives of these programs are to minimize the generation of waste at the facility and dispose of wastes and by-products generated in accordance with CNSC regulatory requirements. The MLO waste management programs referenced in the LCH describe how waste is managed throughout its lifecycle to the point of disposal. This includes waste generation, storage, processing, recycling and removal/transfer activities.

The regulated activities at Orano's MLO have produced and will continue to produce or dispose of various wastes which include the following:

- waste rock
- tailings
- solid waste (domestic, industrial, contaminated solid waste)
- hazardous substances (used oil, waste antifreeze)
- waste water (effluent, sewage, runoff)

Waste rock piles

Orano has a waste rock management plan for 3 separate waste rock piles which include the JEB, Sue C and Sue E. All 3 waste rock piles originated from previous open-pit mining operations that occurred from 1999 to 2008. In November 2021, Orano submitted an updated TID on waste rock management. Orano addressed CNSC staff comments in a satisfactory manner and submitted a revised document that was accepted in January 2023.

CNSC staff continue to monitor the management of waste rock at Orano's MLO to verify compliance with CNSC regulatory requirements.

Error! Reference source not found. shows an aerial view of the Sue site showing the mined-out Sue A, B, C and E pits, Sue infrastructure, and the Sue clean waste rock piles. In this figure, Sue E is in the foreground and Sue C is in the background.



Figure 11.1 - McClean Lake – aerial view of the Sue site (Source: Orano)

Tailings management facility

An engineered tailings management facility (the JEB TMF) was constructed from the previous JEB open pit mine. Tailing deposition at the JEB TMF began in 1999 and continues to receive tailings from the McClean Lake mill.

Orano hires a third-party to conduct an annual geotechnical inspection of the various embankment/containment structures including the JEB TMF at the MLO. Orano submits the third-party report with a corrective action plan to disposition third-party recommendations for CNSC staff review. The JEB TMF is inspected by CNSC staff during regular compliance inspections to verify that the facility is operating as designed.

Key performance indicators of the tailings management system include properties of production tailings from the tailings preparation circuit, the ability to maintain hydrodynamic containment within the TMF, the properties of in situ tailings placed in the TMF, and the TMF integrity.

Prior to issuing construction and operating licences for the TMF, a comprehensive follow-up test work program was developed to verify, optimize and validate the stated tailings performance data using tailings produced during full scale production. This tailings optimization and validation program (TOVP) was first submitted by Orano and approved by AECB (predecessor of CNSC) in 1999.

During the first 5 years of operation, TOVP status reports were submitted annually both to the CNSC and SMOE; currently these reports continue on a 5-year cycle requirement. Orano reports every 5 years on the operational performance of the JEB TMF through the TOVP, which is a provincial licensing requirement to operate the MLO (Saskatchewan Ministry of Environment Approval to Operate PO24-12). The TOVP is an ongoing sampling, monitoring, and research program focused on the performance of the JEB TMF. In 2015, the TOVP was integrated into the Tailings Management Technical Information Document (TMTID). The TMTID provides documentation of the design, operation, and expected future decommissioning of the TMF at the MLO and presents predicted operational and long-term environmental effects and mitigating measures related to tailings management. In May 2020, Orano submitted an updated TMTID, which constitutes the 7th report on in situ sampling campaign results and the 4th–5th year review of the TOVP to optimize and validate long-term tailings performance. It is the first time the TMTID contained information on the characteristics and performance of Cigar Lake tailings placed in the JEB TMF. CNSC staff assessed Orano's TMTID and concluded that the design and operation of the tailings preparation process and the JEB TMF are performing as expected with respect to the protection of the receiving environment.

Following the 5-years cycle requirement, Orano submitted the most recent TMTID in December 2025. CNSC staff's technical review was completed in May 2026, and comments were provided to Orano. The TMTID 2025 presents the TOVP results from the 2023/2024 tailings sampling campaign for the JEB TMF. The review and acceptance of a document of this size and scope typically takes about 1 year.

Solid and liquid wastes

Industrial, radiological, and chemical wastes including dangerous goods and domestic waste are generated at the MLO in both liquid and solid forms. A waste management system has been implemented at the MLO to track and control the appropriate disposition of contaminated and non-contaminated wastes. CNSC staff conducted waste management focused inspections in August 2018 and July 2022 and verified that wastes are being disposed of appropriately at approved facilities.

Decommissioning plans

In accordance with paragraph 3(a)(viii) of the [UMMR](#) and the CNSC [REGDOC-2.11.2, Decommissioning](#), the CNSC requires Orano to maintain decommissioning plans throughout the lifecycle of the MLO. The CNSC and SMOE staff work closely to ensure regulatory requirements are met. A Memorandum of Understanding (MOU) with the province of Saskatchewan guides the nature of the cooperation between the parties [9]. The financial guarantees associated with the decommissioning plans must be reviewed and updated every 5 years, or sooner if there are material changes to the licensee's operational activities. Although both the CNSC and SMOE require financial guarantees be established, in accordance with MOU between the agencies, SMOE holds the financial instruments associated with the financial guarantee for uranium mine and mill sites in Saskatchewan. It should be noted that the SMOE, beneficiary of the financial guarantee, is solely responsible for any associated work related to the decommissioning.

Orano's PDP and financial assurance sets out the strategy and the preliminary plan by which the MLO will be decommissioned in the future. The PDP must be kept current to reflect any changes in the facility or operations and meet the requirements of CSA standard N294-19, *Decommissioning of Facilities Containing Nuclear Substances*, and CNSC Regulatory Guides, CNSC [REGDOC 3.3.1, Financial Guarantees for the Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#), and [REGDOC 2.11.2 Decommissioning](#). The licensee's submitted plan is reviewed and assessed by CNSC staff in accordance with these documents.

To meet the 5-year update requirement, Orano submitted a revised PDP to the CNSC and SMOE on January 31, 2025. The submission included a preliminary decommissioning cost estimate and a request to update the financial guarantee for the MLO. Orano's proposed financial guarantee in the amount of C\$122,557,378 for the MLO represents

approximately a \$20.5 million increase from Orano's previous cost estimate of \$102,098,000. The revised estimate reflects updated rates for materials, equipment, and labor, as well as additional costs associated with decommissioning the expanded JEB TMF.

CNSC staff have assessed the proposed revisions and concluded the revised PDP, including cost estimates for the financial guarantee, meet CNSC regulatory requirements. The SMOE has also reviewed and approved the revised PDP and associated cost estimates (refer to section 5.2.1 for further details on the financial guarantee). This approval was conveyed by official correspondence to Orano and copied to the CNSC [10]. CNSC staff recommend that the Commission accept Orano's proposed financial guarantee in the amount of C\$122,557,378 for the MLO.

3.11.3 Summary

A summary of Orano's past performance, challenges and proposed improvements are presented in the following subsections.

3.11.3.1 Past Performance

Through the review of waste management documentation and inspections during the current licence period, CNSC staff concluded that Orano's MLO waste management program meets regulatory requirements.

For the current licence period, CNSC staff rated Orano's overall performance for the waste management SCA as satisfactory for the MLO.

3.11.3.2 Regulatory Focus

During the current licence period, CNSC staff conducted waste management focused inspections in August 2018 and July 2022 and verified compliance with approved waste disposal requirements. Waste management criteria were also included in other general inspections conducted by CNSC staff at the MLO. All non-compliances identified (e.g., seal the liner edge opening on the southwest side of Sedimentation Pond 2; anchor the liner at the north corner of 36 Hour Pond; assess the integrity of the JEB TMF liner at the section between concrete blocks #11 and 15; conduct a review of work instruction Document No: 504-17; submit documentation for *in-situ* assessments of tailings geochemical properties; propped open contaminated waste bins) were of low safety significance and have been adequately addressed.

CNSC staff will continue to monitor performance in this area through regulatory oversight activities including inspections and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation pertaining to this SCA.

3.11.3.3 Proposed Improvements

During the next licensing term, Orano proposes to install the liner for the JEB TMF expansion project to an elevation of 457.5 mASL in 2027, followed by a staged embankment raise to 461.5 mASL around 2030, with construction monitored relative to the tailings surface. CNSC staff will ensure, through compliance verification activities, that construction progresses safely, and environment is protected.

For the proposed licence period, CNSC staff added the following regulatory documents as compliance verification criteria to the draft LCH for the MLO:

[REGDOC-2.11.2, Decommissioning](#)

[REGDOC-3.3.1, Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities.](#)

CNSC staff will continue to monitor implementation of these regulatory documents through regulatory oversight activities including inspections and desktop reviews of Orano's compliance reporting on this matter.

3.11.4 Conclusion

Based on desktop reviews and inspections, CNSC staff have concluded that the overall performance for this SCA is satisfactory, and that Orano is qualified to carry out the authorized activities at the MLO in this SCA.

3.12 Security

The security SCA covers the programs required to implement and support the security requirements stipulated in the regulations, the licence, orders, or expectations for the facility or activity.

The specific areas that comprise this SCA are not addressed individually in this document.

3.12.1 Trends

The following table indicates the overall rating trends for the security SCA over the current licensing period:

TRENDS FOR SECURITY								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has implemented a security program that meets regulatory requirements under the <u>General Nuclear Safety and Control Regulations</u> to prevent the loss or unauthorized removal of nuclear substances, radioactive sources, prescribed equipment or information at the MLO. CNSC staff monitor Orano's implementation of this program through compliance verification activities. CNSC staff are satisfied with Orano's security program and its implementation. During the current licence period, there were no significant threats to the security or incidents reported at the MLO.								

3.12.2 Discussion

Pursuant to the [NSCA](#) and its regulations, Orano is obligated to protect the environment, the health and safety of persons, and maintain security.

Orano maintains a security program (technical and administrative) at the MLO to minimize risk to the public, employees, the environment and to protect company assets from sabotage, theft, criminal acts by internal or external agents and potential vulnerabilities.

Based on CNSC staff's review of Orano's vulnerability at the MLO, the lack of past incidents involving theft and sabotage to the operation, the remote location of the operation, the percentage of long-term employees, and the lack of evidence of any threats to the operation, the security risk is considered low. There is no change to the security threat at the MLO and the security measures currently in place are adequate.

During the current licensing period, no theft of nuclear material from the MLO was reported. A physical inventory of all uranium material is conducted annually by an external auditor, and monthly by Orano personnel. There is no history of sabotage or any evidence of intent of actual or planned sabotage threats conveyed to CNSC.

CNSC staff concluded that the security measures are sufficient to address the current threat level.

3.12.3 Summary

A summary of Orano's past performance, challenges and proposed improvements are presented in the following subsections.

3.12.3.1 Past Performance

Orano's MLO has implemented a security program that meets regulatory requirements. CNSC staff monitor implementation of these programs through compliance verification activities.

During the current licence period, there have been no thefts or any evidence of malicious acts or planned sabotage against nuclear substances at the MLO.

3.12.3.2 Regulatory Focus

Orano's MLO is required to meet the applicable requirements of sections 3 and 12 of the [GNSCR](#) and section 3(e) of the [UMMR](#). The regulations require reasonable measures and precautions be in place to: maintain site security; implement means

for alerting the licensee in the event of illegal use and removal, sabotage or attempted sabotage; and train workers on the security program at the licensed site.

CNSC's [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material](#), Version 2.1, sets out the minimum security measures that must be implemented to prevent the loss, sabotage and illegal use, possession, or illegal removal of sealed sources during its entire lifecycle.

CNSC staff monitor implementation of security programs through compliance verification activities. Due to the low risk associated with the MLO, a focused security inspection is not scheduled by CNSC staff. However, security criteria were included in 1 inspection conducted by CNSC staff at the MLO, during the current licence period. No non-compliances were identified related to this SCA.

3.12.3.3 Proposed Improvements

There are no proposed improvements or changes for this SCA.

3.12.4 Conclusion

CNSC staff assessed Orano's documentation and analyses under the security SCA and have found them to be acceptable. CNSC staff concluded that the overall performance for this SCA is satisfactory, and that Orano is qualified to carry out the authorized activities at the MLO in this SCA. CNSC staff also concluded that Orano has an acceptable security program in place at the MLO that meets regulatory requirements and makes adequate provisions for the maintenance of national security.

CNSC staff will continue ongoing compliance activities and monitoring activities in the security area to verify that Orano's security program at the MLO, including its implementation, continues to meet regulatory requirements.

3.13 Safeguards and Non-Proliferation

The safeguards and non-proliferation SCA covers the programs and activities required for the successful implementation of the obligations arising from the Government of Canada and the [International Atomic Energy Agency](#) (IAEA) safeguards agreements as well as other measures arising from the [Treaty on the Non-Proliferation of Nuclear Weapons](#). CNSC staff ensure that licensees have implemented and maintained effective programs to allow the application of both safeguards measures and non-proliferation commitments.

3.13.1 Trends

The following table indicates the overall rating trends for the safeguards and non-proliferation SCA over the current licensing period:

TRENDS FOR SAFEGUARDS AND NON-PROLIFERATION								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano continues to implement and maintain an effective program for safeguards measures and nuclear non-proliferation commitments arising from Canada's international obligations under the <i>Treaty on the Non-Proliferation of Nuclear Weapons</i> at the MLO. CNSC staff are satisfied with Orano's program for safeguard measures and meeting nuclear non-proliferation commitments.								

3.13.2 Discussion

Pursuant to the Non-Proliferation Treaty (NPT), Canada has entered into a Comprehensive Safeguards Agreement and an Additional Protocol (hereafter referred to as the safeguards agreements) with the IAEA. The objective of the safeguards agreements is for the IAEA to establish a set of measures that confirms nuclear material is not being diverted and that all nuclear activities are peaceful in nature. The CNSC provides the mechanism, through the [NSCA](#), regulations and a licence condition, for the IAEA to implement the safeguards agreements at the MLO. Conditions for the application of IAEA safeguards are contained in the operating licence. Criteria to meet the conditions are contained in the LCH and outlined in CNSC's [REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*](#). Compliance includes the timely provision of reports on the movement and location of all nuclear materials; operational records, and access and assistance to IAEA inspectors for safeguards activities. To comply with the safeguards requirements, Orano's MLO ensures the following:

- CNSC and IAEA are provided with required access, information and support
- The site maintains trained personnel with required access, information and support
- Regulatory reports are prepared as required, and nuclear material accountancy records are maintained

- All inventory is tracked, and the required documentation for material movement is maintained

Orano maintains a safeguards and nuclear accountancy program document for the MLO that meets the requirements of REGDOC-2.13.1. Orano's documentation describes considerations and measures taken to satisfy the regulatory requirements and expectations for the safeguards and non-proliferation SCA.

3.13.3 Summary

A summary of Orano's past performance, challenges and proposed improvements are presented in the following subsections.

3.13.3.1 Past Performance

During the current licence period, Orano complied fully with IAEA and CNSC requests. In 2022, a safeguards inspection was conducted by IAEA inspectors with CNSC staff participation at the MLO. Orano provided the IAEA and CNSC with necessary access and assistance to perform its activities and complied with all regulatory requirements. No issues were identified by the IAEA as part of these activities.

3.13.3.2 Regulatory Focus

CNSC staff will continue to monitor Orano's performance through participation in IAEA activities and through CNSC regulatory oversight activities independent of the IAEA. Monitoring will include inspections and desktop reviews of Orano's compliance with reporting and revisions to relevant program documentation pertaining to this SCA.

3.13.3.3 Proposed Improvements

No improvements are proposed by CNSC staff with respect to this SCA.

3.13.4 Conclusion

CNSC staff assessed MLO's documentation and performance under the safeguards and non-proliferation SCA and found it to be acceptable. CNSC staff concluded that Orano's overall performance for this SCA is satisfactory, and that Orano is qualified to carry out the authorized activities at the MLO in this SCA.

3.14 Packaging and Transport

The packaging and transport SCA covers programs for the safe packaging and transport of nuclear substances to and from the licensed facility. The specific areas that comprise this SCA at the MLO are not addressed individually in this document.

3.14.1 Trends

The following table indicates the overall rating trends for the packaging and transport SCA over the current licensing period:

TRENDS FOR PACKAGING AND TRANSPORT								
Overall Compliance Ratings								
2017	2018	2019	2020	2021	2022	2023	2024	2025*
SA	SA	SA	SA	SA	SA	SA	SA	SA
*January 1 to September 30, 2025 Comments Orano has a packaging and transportation program at the MLO that ensures compliance with the <i>Packaging and Transport of Nuclear Substances Regulations, 2015</i>, and the <i>Transportation of Dangerous Goods Regulations</i>. CNSC staff monitor Orano's implementation of this program through compliance verification activities. CNSC staff have confirmed that the packaging and transport activities are conducted in a safe manner.								

3.14.2 Discussion

Orano has developed and implemented a packaging and transport program for activities at all Orano operated sites to ensure compliance with the [*Packaging and Transport of Nuclear Substances Regulations, 2015*](#), and the [*Transportation of Dangerous Goods Regulations*](#) for all shipments to and from the site. Orano's packaging and transport program also covers elements of package design and package maintenance as required by the regulations.

Orano's MLO receives ore slurry shipments from Cameco's Cigar Lake Operation (CLO). Ore slurry transportation from the CLO to the MLO is the responsibility of the CLO. The ore slurry is shipped in packages (i.e., totes) which are similar in design to the packages that have been safely used at Cameco's McArthur River and Key Lake Operations since 1999. These packages meet the regulatory requirements for industrial packages (Type IP-2) as defined in the *Packaging and Transport of Nuclear Substances*

Regulations, 2015. The concentrate (commonly referred to as yellowcake) which is the main output of the milling process, is transported in drums which meet the Type IP-1 packaging requirements in accordance with the *Packaging and Transport of Nuclear Substances Regulations, 2015* and are also labeled with the information required by these regulations.

During the licence period, minor packaging and transport incidents involving ore slurry totes slightly exceeding surface contamination limits were reported by Orano. None of the incidents resulted in health or radiological effects, or releases to the environment. Corrective actions were taken by the licensee to CNSC staff's satisfaction.

CNSC staff concluded that Orano's packaging and transportation documents meet applicable regulatory requirements.

3.14.3 Summary

A summary of Orano's past performance, challenges and proposed improvements are presented in the following subsections.

3.14.3.1 Past Performance

Orano is performing satisfactorily in the packaging and transport SCA at the MLO and continues to demonstrate compliance with the [*Packaging and Transport of Nuclear Substances Regulations, 2015*](#) and the [*Transportation of Dangerous Goods Regulations*](#). For the current licence period, CNSC staff rated Orano's overall performance for the packaging and transport SCA as satisfactory.

3.14.3.2 Regulatory Focus

In October 2021, CNSC staff conducted a focused inspection at the MLO for the packaging and transport SCA during the current licence period. Orano was found to be in compliance with the inspection criteria. CNSC staff concluded that the packaging and transport program and associated procedures complied with regulatory requirements. Packaging and transport criteria were also included in other general inspections conducted by CNSC staff at the MLO during the current licence period. All non-compliances identified were of low safety significance (e.g., TDG training certificates and records completed; provide records documenting Type IP-3 packages; information on the transport documents in prescribed order; TDG training certificates signed by employees) and have been adequately addressed.

CNSC staff will continue to monitor performance in this area including Orano's commitment of continual improvement for the packaging and transport system

through regulatory oversight activities. Monitoring includes inspections and desktop reviews of Orano's compliance reporting and revisions to relevant program documentation pertaining to this SCA.

3.14.3.3 Proposed Improvements

There are no proposed improvements for this SCA.

3.14.4 Conclusion

CNSC staff concluded that Orano has an effective program for the safe packaging and transport of radioactive materials at the MLO that meet regulatory requirements. CNSC staff rate this SCA as satisfactory.

4 Consultation and engagement

4.1 Indigenous consultation and engagement

The common-law duty to consult with Indigenous Nations and communities applies when the Crown contemplates actions that may adversely affect potential or established Indigenous and/or treaty rights. The CNSC ensures that all of its licence decisions under the [NSCA](#) uphold the honour of the Crown and uphold consider Indigenous peoples' potential or established Indigenous and/or treaty rights pursuant to section 35 of the [Constitution Act, 1982](#).

CNSC staff are committed to building long-term relationships with Indigenous Nations and communities who have interests in CNSC-regulated facilities within their traditional and/or treaty territories. The CNSC's Indigenous engagement practices include sharing information, discussing topics of interest, seeking feedback and input on CNSC processes, and providing opportunities for participation in environmental monitoring. The CNSC also provides funding support (through the CNSC's Participant Funding Program) for Indigenous peoples to meaningfully participate in Commission proceedings and ongoing regulatory activities.

CNSC staff discussed and engaged on topics of interest and concern relating to the McClean Lake Operation (MLO) licence renewal with the identified and interested Indigenous Nations and communities through various engagement and communication activities, as well as to conduct collaborative, in-person activities to continue building and strengthening the relationship between the CNSC and each Nation.

[REGDOC-3.2.2, Indigenous Engagement](#), sets out requirements and guidance for licensees whose proposed projects may raise the Crown's Duty to Consult. While the CNSC cannot delegate its obligation, it can delegate procedural aspects of the consultation process to licensees, where appropriate. The information collected and measures proposed by licensees to avoid, mitigate, or offset potential adverse impacts from the proposed licence renewal may be used by CNSC staff in fulfilling the Crown's consultation and engagement obligations.

Based on the information in Orano's application for the MLO licence renewal, CNSC staff found that the licence renewal is unlikely to cause any new adverse impacts to the exercise of potential or established Indigenous and/or Treaty rights, as it would not change the McClean Lake site characterization or lead to new offsite impacts.

4.1.1 Discussion

The MLO is located in northern Saskatchewan and is in Treaty 10 territory, and within the traditional territories of the Denesūliné, Cree and Métis peoples. CNSC staff have identified the following Indigenous Nations and communities which may have an interest in the proposed licence renewal:

- Birch Narrows Dene Nation (BNDN)
- Buffalo River Dene Nation (BRDN)
- English River First Nation (ERFN)
- Fond du Lac Denesųliné First Nation (FDLDFN)⁴
- Kineepik Métis Local (KML)
- Métis Nation Saskatchewan (MN-S)
- Ya'thi Néné Land and Resources (YNLR, representing Black Lake Denesųliné First Nation and Hatchet Lake Denesųliné First Nation, as well as the municipalities of Stony Rapids, Uranium City, Wollaston Lake, and Camsell Portage)

These Indigenous Nations and communities were identified due to their communities' proximity to the MLO, Treaty areas and/or traditional territories, or previously expressing interest in remaining informed of CNSC licensing activities occurring within or proximal to their traditional territories.

On February 24, 2026, CNSC staff sent notification of the Orano's 2-year licence renewal application to all the identified Indigenous Nations and communities. These notifications included information regarding the licence renewal application, the regulatory review process, PFP opportunities, and opportunities for engagement in the process, including the Commission hearing. CNSC staff offered to have dedicated meetings and discussions with each identified Indigenous Nation and community regarding Orano's licence renewal application. CNSC staff also sent follow-up correspondence to ensure receipt of notifications and to facilitate answering any questions.

CNSC staff have been engaging with all the identified Indigenous Nations and communities on the MLO on an ongoing basis. This includes collaborating with Nations on the CNSC staff's Uranium Mines and Mills (UMM) Regulatory Oversight Report (ROR). On September 17, 2025, CNSC staff provided updates on UMM projects, including the McClean Lake Operation, at the annual UMM ROR engagement event in Saskatoon, Saskatchewan. Attendees included members from ERFN, MN-S, KML, and YNLR.

CNSC staff have also established Terms of References (TOR) for long-term engagement with both ERFN and YNLR. The intent of the TOR is to establish regular meetings and engagement workplans to ensure that the CNSC and the Nation are collaborating on

⁴ FDLDFN has notified various federal departments and proponents to consult with FDLFN Chief and Council on activities and projects within FDLFN's traditional territories. FDLDFN continues to have representation on YNLR's Athabasca Lands Protection Committee (ALPC) and YNLR has secured PFP to intervene on this licence renewal on behalf of the 3 Denesųliné First Nations including FDLDFN. FDLDFN will continue to be consulted and engaged alongside YNLR for the purposes of this licence renewal.

areas of interest and addressing issues and concerns relating to CNSC-regulated nuclear facilities and activities in the Nation's traditional and/or Treaty territory. Each TOR includes a workplan that the CNSC and the Nation developed jointly to identify key areas of interest and guide regularly scheduled meetings. The MLO is one of the ongoing discussion topics in both ERFN's and YNLR's TOR engagement workplans. CNSC staff also engage and meet regularly with MN-S and KML and have offered to collaboratively develop TORs with both groups. Finalization of a TOR with KML is anticipated in the coming months. Those meetings and engagement opportunities include updates on CNSC-regulated facilities and sites of interest, including the MLO. CNSC staff also have an established relationship with BNDN and BRDN, meeting with them regularly and updating them on CNSC-regulated activities.

As part of the 2025 McClean Lake IEMP campaign in northern Saskatchewan, CNSC staff developed a sampling plan in consultation with Indigenous Nations and communities. CNSC staff sent the draft sampling plan to YNLR, who interviewed community members from Wollaston and Black Lake areas asking for suggested sampling locations and media. MN-S also received a copy of the sampling plan for their review. CNSC staff incorporated some of those suggestions received into the final sampling plan. The CNSC contracted CanNorth Environmental Services, an Indigenous-owned northern Saskatchewan contractor, to collect the samples. The sample collection conducted by CanNorth included a Hatchet Lake Denesųliné First Nation member who directly participated in the IEMP sampling campaign. The results of the sampling activities relating to the MLO will be posted on the CNSC's website at the following link: [Independent Environmental Monitoring Program: McClean Lake Operation](#)

The IEMP results from 2025 are consistent with the environmental monitoring results submitted by Orano, supporting CNSC staff's assessment that Orano's environmental protection program is effective. The results add to the body of evidence that people and the environment in the vicinity of MLO are protected and that there are no anticipated health impacts from the operation of the facility.

To date, the CNSC is not aware of any specific issues or concerns regarding Orano's licence renewal application for the MLO. However, CNSC staff will continue to engage and follow-up with each identified Indigenous Nation and community in advance of the Commission hearing to ensure that Nations can participate in the regulatory review process and address concerns that arise, as appropriate.

Licensee engagement activities

Orano reports on its activities related to the MLO through community information sessions, technical briefings, regular participation in the Northern Saskatchewan Environmental Quality Committee, social media, and website updates. These activities have occurred throughout the current licence period, and Orano remains committed to

providing public information and disclosure to the public and Indigenous Nations and communities for the duration of their operations.

During the current licensing period, the licensee has met its regulatory requirements for Indigenous engagement and public outreach while actively working to enhance efforts relating to engagement and communications. The licensee has undertaken regular public opinion surveys in northern Saskatchewan to help determine the effectiveness of its public information activities. The CNSC recognizes Orano's efforts in developing and sustaining effective public information programs that inform and engage the citizens of northern Saskatchewan.

CNSC staff are satisfied with Orano's engagement activities to date and recommend that Orano continue their efforts to enhance Indigenous and public engagement programs and activities throughout their licensing term. CNSC staff also recommend that the licensee continue engaging with Indigenous Nations and communities that have expressed interest in its operations and activities.

4.1.2 Conclusion

As Orano's licence renewal application does not propose a change to the licensed activities at the McClean Lake site, CNSC staff concluded that Orano's 2-year licence renewal is unlikely to cause any new adverse impacts to any potential or established Indigenous and/or Treaty rights. The CNSC conducted an engagement and outreach process for this licence renewal application with all the interested and identified Indigenous Nations and communities and remains committed to meaningful, ongoing engagement with Indigenous Nations and communities that have interests in the MLO. CNSC staff also confirmed that Orano conducted engagement activities with the interested Indigenous Nations and communities for this license renewal to ensure that Nations have opportunities to express issues or concerns about the application. Further, CNSC staff have encouraged each of the identified Indigenous Nations and communities to participate in the regulatory review process, including providing an intervention for the Commission hearing in writing. The CNSC remains committed to meaningful, ongoing engagement and collaboration with Indigenous Nations and communities that have interests in the MLO and encourages Orano to continue engaging with the interested Indigenous Nations and communities during its licensing term and other ongoing activities of interest.

4.2 Public consultation and engagement

The [NSCA](#) mandates the CNSC to disseminate objective scientific, technical and regulatory information to the public concerning its activities and the activities it regulates. CNSC staff fulfill this mandate in a variety of ways, including hosting in-person and virtual information sessions and through annual regulatory reports.

4.2.1 Discussion

As per section 17 of the [Canadian Nuclear Safety Commission Rules of Procedure](#), a Notice of Public Hearing has been issued and posted to the CNSC website, inviting written comments and requests for appearances before the Commission. CNSC staff also communicated information about the regulatory process for the renewal of Orano's MLO to the public, stakeholders, and Indigenous communities by various means, including meetings with Indigenous Nations and communities, responding to inquiries from the public and the media, and CNSC's social media accounts. CNSC staff encourage the public and Indigenous communities to participate in the Commission's public hearing. The PFP was offered to assist interested members of the public, Indigenous peoples, and other stakeholders in preparing for and participating in the Commission's public hearing.

4.2.2 Conclusion

CNSC staff continue to inform the public and Indigenous communities of our regulatory activities through regular website updates, publicly webcast Commission proceedings, social media, public webinars, mail drops, and regular discussions with key audiences near the facility. CNSC staff encourage the public and Indigenous communities to participate in the Commission's public hearing. The PFP was offered to assist interested members of the public, Indigenous peoples, and other stakeholders in preparing for and participating in the Commission's public hearing.

4.3 Licensee public information and engagement

A Public Information and Disclosure Program (PIDP) is a regulatory requirement for licence applicants and licensees of Class I nuclear facilities, uranium mines and mills and certain Class II nuclear facilities. These requirements are found in [REGDOC-3.2.1, Public Information and Disclosure](#).

The primary goal of the PIDP is to ensure that information related to the health, safety and security of persons and the environment, and other issues associated with the lifecycle of nuclear facilities are effectively communicated to the public. The program must include a commitment to, and protocol for ongoing, timely communication of information related to the licensed facility during the course of the licence period.

CNSC's expectations of a licensee's public information program and disclosure protocol are commensurate with the level of risk of the facility, as well as the level of public interest in the licensed activities. The program and protocol may be further influenced by the complexity of the nuclear facility's lifecycle and activities, and the risks to public health and safety and the environment perceived to be associated with the facility and activities.

4.3.1 Discussion

Orano maintains a PIDP for its McClean Lake facility.

CNSC staff review Orano's PIDP activities annually to verify compliance with its public information and engagement commitments. CNSC staff also independently validate that information channels are being used to share information with the public in a way that is timely, effective and accessible.

CNSC staff confirm that throughout the licence period, Orano consistently and appropriately communicated with the public regarding events and activities of interest at McClean Lake using a range of communication channels and adhered to its PIDP commitments.

Licensees are expected to review its PIDPs regularly and update them as needed. Ahead of this licence renewal application, Orano submitted a revised PIDP in early 2025 which built upon past activities to address the communication needs of target audiences. This revised PIDP was reviewed and accepted by CNSC staff as meeting regulatory requirements. CNSC staff are satisfied with the measures Orano has in place to solicit public feedback and implement it into its PIDP.

If the Commission were to renew the licence, CNSC staff would continue their oversight of Orano's public information activities to verify ongoing compliance with regulatory requirements and that information is shared with the public in a timely, accessible and effective manner.

4.3.2 Conclusion

CNSC staff have reviewed the public communication and engagement measures taken by Orano under its public information and disclosure program and are satisfied that Orano continues to regularly and proactively communicate with members of the public in a timely and easily accessible way.

4.4 Participant funding program

The CNSC established the Participant Funding Program (PFP) in 2011 to:

1. enhance individual, not-for-profit organization and Indigenous Nations and Communities participation in the CNSC's environmental assessment (EA) and licensing processes for major nuclear facilities (e.g., uranium mines, nuclear power plants, nuclear substance processing, or nuclear waste facilities)
2. assist individuals, not-for-profit organizations and Indigenous Nations and Communities to bring value-added information to the Commission through informed and topic-specific interventions related to EAs and licensing (i.e., new, distinctive and relevant information that contributes to a better understanding of the anticipated effects of a project)

4.4.1 Discussion

The CNSC awarded participant funding through its PFP to assist Indigenous Nations, communities and organizations, members of the public and interested parties in participating in the regulatory review process for Orano Canada Inc.'s application to renew its uranium mine and mill licence for the McClean Lake Operation and providing value-added information to the Commission through informed and topic-specific interventions. A Funding Review Committee (FRC) reviewed the funding applications received and made recommendations on the allocation of funding to eligible applicants.

Based on recommendations from the FRC, the CNSC awarded a total of \$62,703.75 to the following recipients:

- Métis Nation-Saskatchewan
- Ya'thi Néné Land and Resource Office
- English River First Nation
- Kineepik Métis Local

The details of this offering can be found in the online announcement [here](#).

4.4.2 Conclusion

Through the PFP, the CNSC has offered funding to assist interested members of the public, Indigenous Nations and communities, and interested parties to prepare for and participate in the Commission's public hearing.

5 Events and other matters of regulatory interest

5.1 Cost recovery

Paragraph 24(2)(c) of the [NSCA](#) requires that a licence application is accompanied by the prescribed fee. The [CNSC Cost Recovery Fees Regulations](#) (CRFR) set out the specific requirements based on the activities to be licensed. An applicant for a Class I facility licence is subject to Part 2 of CRFR, which is based on Regulatory Activity Plan fees.

5.1.1 Discussion

Orano is in good standing with respect to CRFR requirements for the MLO.

Orano's licence renewal application is not an initial application, and as such, the applicant is not required to submit the initial fee of C\$25,000 as described in paragraph 7(1)(a), which is only for initial applicants. In this case, Orano is subject to subsection 5(2) of the CRFR, which relates to quarterly invoices sent to licensee.

5.1.2 Conclusion

After assessing CNSC records, CNSC staff concluded that Orano is in good standing with respect to MLO meeting CRFR requirements.

No licence condition is required for this matter.

5.2 Financial guarantees

Under subsection 24(5) of the NSCA, the Commission may require that a licensee provide a financial guarantee in a form that is acceptable to the Commission. [GNSCR](#) paragraph 3(1) stipulates that *"An application for a licence shall contain the following information:*

(l) a description of any proposed financial guarantee relating to the activity to be licensed

The financial guarantee for decommissioning is established to fund the activities described in the PDP. These requirements are found in [REGDOC-3.3.1, Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities](#).

5.2.1 Discussion

Orano maintains a financial guarantee for the decommissioning of the MLO. The current financial guarantee is C\$102,098,000. As discussed in subsection 3.11.2, Orano has revised its PDP and cost estimate for the MLO. The revised plan was prepared based on a “decommission tomorrow” scenario and covered all decommissioning costs. Orano’s proposed financial guarantee in the amount of C\$122,557,378 for the MLO represents approximately a \$20.5 million increase from Orano’s previous cost estimate of C\$102,098,000. The revised estimate reflects updated rates for materials, equipment, and labor, as well as additional costs associated with decommissioning the expanded JEB TMF. CNSC staff and SMOE officials reviewed the proposed revisions and concluded that the revised PDP including cost estimates and FGs meet regulatory requirements.

The Government of Saskatchewan, under [The Mineral Industry Environmental Protection Regulations, 1996](#), also requires that mining and milling projects be covered by financial guarantees. The provincial review of Orano’s PDP and cost estimate is independent to CNSC staff’s review. The MOU between CNSC and the province of Saskatchewan allows a single PDP and financial assurance, subject to consultation and mutual acceptance [9]. The MOU also specifies that the financial guarantee is conditional until approved by the Commission. The SMOE is the beneficiary of the financial guarantee for all the operating and decommissioned uranium mine and mill sites as they are located on provincial crown land.

As a financial guarantee instrument, Orano continues to use letters of credit and surety bonds previously accepted by the Commission and in accordance with CNSC REGDOC 3.3.1, *Financial Guarantees for the Decommissioning of Nuclear Facilities and Termination of Licensed Activities*. The financial guarantee covers the MLO and the Midwest Project, and the value of the financial guarantee is split between Orano and Denison Mines Corp. as joint venture agreements and according to its share of ownership (Orano 77.5% and Denison 22.5%). Orano has provided copies of letters of credit and surety bond for the current financial guarantee of C\$102,098,000 in place to the CNSC and confirmed that Orano does not intend to change the types of financial instruments when updating the amounts for the proposed financial guarantee of C\$122,557,378.

Orano has identified the PDP and FA, as containing confidential and proprietary information of a sensitive financial and personal nature and submitted a redacted copy for public release. Accordingly, Orano requested that the Commission, pursuant to Rule 12 of the CNSC Rules of Procedure, protect the relevant portions from public disclosure [2]. On April 24, 2026, the Commission rendered its decision and concluded that the criteria set out in paragraph 12(1)(b) of the Rules have been met [3]. Consequently, only the redacted version of the PDP and FA shall be made publicly available. The

Commission is satisfied that the redacted version provides sufficient information to satisfy the public interest.

5.2.2 Conclusion

CNSC staff have reviewed the proposed revisions and concluded that the revised PDP including cost estimates and financial guarantees meet regulatory requirements of CNSC REGDOC 3.3.1, *Financial Guarantees for the Decommissioning of Nuclear Facilities and Termination of Licensed Activities*. CNSC staff are satisfied that Orano's proposed financial guarantee is adequate for decommissioning of the MLO and recommend that the Commission accept Orano's proposed financial guarantee in the amount of C\$ 122,557,378.

5.3 Improvement plan and significant future activities

5.3.1 Discussion

For any significant future activities and improvement plans, CNSC staff will review the information submitted by Orano to determine if the proposed activity meets the licensing basis. Any changes not within the licensing basis will be brought to the Commission for approval.

Orano identified activities which may be undertaken during the next licence period at the MLO:

- Sue F Project (formerly known as Caribou Project):
 - review of change in mining method
 - licence amendment application
- Midwest Project:
 - review of change in mining method
 - licence amendment application
- notification of change related to modifications required to address gypsum scaling
- notification of McClean mining pad expansion
- 5-year review and update to the Security Threat Risk Assessment
- 5-year review of McClean Lake Operation's Radiation Protection Program
- submission of Waste Rock Technical Information Document

- notification to improve Arsenic Management
- replacement of east CX holding pond liner
- continuation of review of Environmental Performance Technical Information Document, Volume I & II (submitted in December 2025)
- continuation of review of Tailings Management Technical Information Document (submitted in December 2025)

When sufficient information has been gathered and plans developed, including any additional information necessary to support the licensed activity within those areas, Orano would provide notification to CNSC staff including supporting information. CNSC staff expect Orano to continue to apply the principles of continuous improvement to safety, health and environmental performance for the facility. Any changes and improvements to facilities over the proposed licence period will be reviewed for compliance with licensing requirements. Any activity that is proposed during the licence period that is not considered to be within the licensing basis will be presented to the Commission for their consideration. CNSC staff will continue to conduct regulatory oversight of these activities during inspections as part of compliance verification to ensure the activities proposed are completed safely and are protecting the environment.

5.3.2 Conclusion

CNSC staff expect Orano to continue implementing continuous improvement practices related to safety, health, and environmental performance at the MLO. Any changes to the McClean Lake facilities during the proposed licence period will be subject to regulatory review to ensure compliance with licensing requirements and consistency with the approved licensing basis. Compliance inspections by CNSC staff will be conducted to ensure the proposed activities are completed safely and protect the environment.

5.4 Nuclear liability insurance

Pursuant to section 7 of the [*Nuclear Liability and Compensation Act*](#) (NLCA), which came into force on January 1, 2017, and previously under the [*Nuclear Liability Act*](#), the licensee for designated nuclear installations is required to maintain nuclear liability insurance.

5.4.1 Discussion

Orano's MLO isn't designated as nuclear installation under the NLCA because Orano only processes natural uranium ore which is excluded from the definition of nuclear material under the NLCA.

5.4.2 Conclusion

Orano's MLO does not meet the criteria to be designated as a nuclear installation; therefore, it is not under the purview of the NLCA. Orano maintains industrial insurance as a commercial necessity.

5.5 Delegation of authority

The Commission may include in a licence any condition it considers necessary for the purposes of the [NSCA](#). The Commission may delegate authority to CNSC staff with respect to the administration of licence conditions, or portions thereof.

There is 1 proposed licence condition in the proposed MLO licence, UML-MINEMILL-McCLEAN.00/2029 that contains the phrase below:

- **3.2 Reporting Requirements**

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

This licence condition is in the existing licence and the delegation for reporting has previously been authorized.

CNSC staff recommend the Commission delegate its authority for the purposes described in the above licence condition to the following staff:

- Director, Uranium Mines and Mills Division
- Director General, Directorate of Nuclear Cycle and Facilities Regulation
- Vice-President, Advanced Reactor Technology and Nuclear Facilities Regulation

6 Overall Conclusions and Recommendations

CNSC staff's assessment concluded that the licensee's performance during the licensing term (July 1, 2017, to September 30, 2025) was satisfactory and met regulatory requirements. CNSC staff's conclusions have informed its recommendation that Orano is qualified to carry on the licensed activities, and in so doing, will make adequate provision for the protection of the environment, the health and safety of persons, and the maintenance of national security and measures required to implement Canada's international obligations.

CNSC staff recommend that the Commission:

1. **Renew** the proposed uranium mine and mill licence for the McClean Lake Operation UML-MINEMILL-McCLEAN.00/2029.
2. **Accept** the proposed revised financial guarantee amount of C\$122,557,378 for Orano's McClean Lake Operation for decommissioning.
3. **Delegate** authority as set out in section 5.5 of this CMD.

References

1. Correspondence from C. Braithwaite (Orano) to C. Salmon (CNSC), *McClean Lake Operation – CNSC Licence UML-MINEMILL-McCLEAN.02/2027 RENEWAL Request for 2-Year Term*, August 11, 2025 (e-Doc 7560570).
2. Request for Confidentiality - McClean Lake Operation - Preliminary Decommissioning Plan and Financial Assurance, Version 10, March 20, 2026.
3. Record of Decision in the Matter of Orano Canada Inc., *Commission Ruling on Request to Protect Confidential Information*, Hearing in Writing in September 2026.
4. Record of Decision In the Matter of Orano Canada Inc., *Application to Renew the McClean Lake Operation Uranium Mine Operating Licence*, Public Hearing Date(s) June 7 and 8, 2017, (e-Doc 5339632).
5. *Record of Decision In the Matter of Orano Canada Inc., Application to amend the McClean Lake Operation Uranium Mine Operating Licence*, Public Hearing Date(s) October 4, 2021, (e-Doc 6706444).
6. Correspondence from K. Hughes (Orano) to S. Akhter (CNSC) and C. Frantik (SMOE), *McClean Lake Operation - 2025 Environmental Performance Technical Information Document, Volume 1, Version 1, Revision 0*, December 2025.
7. Correspondence from K. Hughes (Orano) to S. Akhter (CNSC) and C. Frantik (SMOE), *McClean Lake Operation - 2025 Environmental Performance Technical Information Document, Volume 2 of 2 – Environmental Risk Assessment, Version 1, Revision 0, December 2025*.
8. International Standards Organization, *ISO 14001:2015 Standard Environmental Management System – Requirements with guidance for Use*, September 2015.
9. Memorandum of Understanding between Saskatchewan and AECB, Atomic Energy Control Board, September 1996 (e-Doc 3816864).
10. Correspondence from C. Frantik (SMOE) to C. Braithwaite (Orano), *McClean Lake Operation – Ministry Accepts Mclean Lake Preliminary Decommissioning Plan and Financial Assurance Version 10*, February 27, 2026.

Glossary

For definitions of terms used in this document, see [REGDOC-3.6, Glossary of CNSC Terminology](#), which includes terms and definitions used in the [Nuclear Safety and Control Act](#) and the [Regulations](#) made under it, and in [CNSC regulatory documents](#) and other publications.

Additional terms and acronyms used in this CMD are listed below.

Acronym	Term
AECB	Atomic Energy Control Board
ALARA	As low as reasonably achievable
AREVA	AREVA Resources Canada Inc.
BE	Below expectations
CA	Complementary access
CMD	Commission member document
CNSC	Canadian Nuclear Safety Commission
COPC	Contaminants of potential concerns
CRFR	<i>Cost Recovery Fees Regulation</i>
CSA	CSA Group (formerly Canadian Standards Association)
CX Plant	Crystallization Plant
EA	Environmental assessment
EMP	Environmental monitoring program
EP	Environmental protection
EPR	Environmental protection review
EP TID	Environmental Performance Technical Information Document
ERA	Environmental risk assessment
ERT	Emergency response team

FA	Financial assurance
FDM	Facility description manual
FG	Financial guarantee
FHA	Fire hazard assessment
FRC	Funding review committee
FS	Fully satisfactory
GNSCR	<i>General Nuclear Safety and Control Regulations</i>
IAEA	International Atomic Energy Agency
IMS	Integrated management system
JEB	John Everett Bates
Kg	Kilogram
kPa	Kilopascals
L	Litre
LCH	Licence conditions handbook
LLRD	Long-lived radioactive dust
LTi	Lost time injury
mASL	Metres above sea level
MCM	Million cubic metres
MKg	Million Kilogram
MLO	McClean Lake Operation
MOU	Memorandum of Understanding
m/s	Metres per second
mSv	Millisievert
NBCC	<i>National Building Code of Canada</i>

NEW	Nuclear energy worker
NFCC	<i>National Fire Code of Canada</i>
NLCA	<i>Nuclear Liability and Compensation Act</i>
NSCA	<u>Nuclear Safety and Control Act</u>
OHSAS	Occupational Health and Safety Assessment Series
Orano	Orano Canada Inc.
PDP	Preliminary decommissioning plan
PFP	Participant funding program
PIDP	Public Information and Disclosure Program
p-mSv	Person-millisieverts
PPE	Personal protective equipment
RCOP	Radiation Code of Practice
REGDOC	Regulatory document
RnG	Radon gas
RnP	Radon progeny
ROR	Regulatory oversight report
RP	Radiation Protection
RPR	<i>Radiation Protection Regulations</i>
SA	Satisfactory
SABRE	Surface Access Borehole Resource Extraction
SAT	Systematic approach to training
SCA	Safety and control area
SMOE	Saskatchewan Ministry of Environment
SX	Solvent extraction

TMTID	Tailings Management Technical Information Document
TMF	Tailings management facility
TOVP	Tailings optimization and validation plan
UA	Unacceptable
UMMR	<i>Uranium Mines and Mills Regulations</i>
µg	Microgram
WTP	Water treatment plant

APPENDIX A:

Basis for the Recommendation(s)

A1: Regulatory Basis

The recommendations presented in this CMD are based on compliance objectives and expectations associated with the relevant SCAs and other matters. The regulatory basis for the matters that are relevant to this CMD are as follows.

Management System

The regulatory foundation for the recommendation(s) associated with Management System includes the following:

The regulatory foundation for the recommendation(s) associated with Management System includes the following:

- The [*General Nuclear Safety and Control Regulations*](#) (GNSCR) requires that an application for a licence shall contain, under paragraph:
 - 3(1)(k), the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the Act and the regulations made under the Act, including the internal allocation of functions, responsibilities and authority.
- It is a requirement of the GNSCR under section 15 that every applicant for a licence and every licensee shall notify the Commission of:
 - 15(a), the persons who have the authority to act for them (the applicant/licensee) in their dealings with the Commission.
 - 15(b), the names and position titles of the persons who are responsible for the management and control of the licensed activity and the nuclear substance, nuclear facility, prescribed equipment or prescribed information encompassed by the licence.
 - 15(c), any change in the information referred to in paragraphs (a) and (b) within 15 days after the change occurs.
- It is a requirement of the *Uranium Mines and Mills Regulations* (UMMR) under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the GNSCR, in relation to the activity to be licensed:

- 3(b)(v), the proposed management system for the activity, including measures to promote and support safety culture.

Human Performance Management

The regulatory foundation for the recommendation(s) associated with human performance management includes the following:

It is a requirement of the General Nuclear Safety and Control Regulations under section 12, that every licensee shall:

- 12(1)(a), ensure the presence of a sufficient number of qualified workers to carry on the licensed activity safely and in accordance with the Act, the regulations made under the Act and the licence.
- 12(1)(b), train the workers to carry on the licensed activity in accordance with the Act, the regulations made under the Act and the licence.
- 12(1)(e), require that every person at the site of the licensed activity use equipment, devices, clothing and procedures in accordance with the Act, the regulations made under the Act and the licence.

It is a requirement of the Uranium Mines and Mills Regulations under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the General Nuclear Safety and Control Regulations:

- 3(d)(v), proposed training program for workers.

It is a requirement of the Uranium Mines and Mills Regulations under section 10, in relation to operating procedures:

- 10(b), that every licensee shall train its workers to perform their work in accordance with the operating procedures.

It is a requirement of the Uranium Mines and Mills Regulations under section 15, in relation to training program:

- 15(1), that where a worker successfully completes the training program in basic radiation health and safety referred to in a licence, the licensee shall issue to the worker a certificate indicating that the worker has completed a training program in basic radiation health and safety that is acceptable to the Commission.
- 15(2), that every licensee shall provide a copy of the training program referred to in the licence to a worker's representative.

It is a requirement of the Uranium Mines and Mills Regulations under section 16, in relation to records to be kept and made available:

- 16(1)(k), that every licensee shall keep a record of the training received by each worker.

- 16(3), that every licensee shall retain a record of the training referred to in paragraph (1)(k) for the period that the worker is employed at the uranium mine or mill.

Operating Performance

The regulatory foundation for the recommendation(s) associated with operating performance includes the following:

It is a requirement of the GNSCR under subsection 29(1), that every licensee who becomes aware of any of the following situations shall immediately make a preliminary report to the Commission of the location and circumstances of the situation and of any action that the licensee has taken or proposes to take with respect to it:

- 29(1)(a), a situation referred to in paragraph 27(b) of the Act.
- 29(1)(b), the occurrence of an event that is likely to result in the exposure of persons to radiation in excess of the applicable radiation dose limits prescribed by the [Radiation Protection Regulations](#) (RPR).
- 29(1)(c) a release, not authorized by the licence, of a quantity of radioactive nuclear substance into the environment.
- 29(1)(d), a situation or event that requires the implementation of a contingency plan in accordance with the licence.
- 29(1)(f), information that reveals the incipient failure, abnormal degradation or weakening of any component or system at the site of the licensed activity, the failure of which could have a serious adverse effect on the environment or constitutes or is likely to constitute or contribute to a serious risk to the health and safety of persons or the maintenance of security.
- 29(1)(h), a serious illness or injury incurred or possibly incurred as a result of the licensed activity.
- 29(1)(i) the death of any person at a nuclear facility.

It is a requirement of the GNSCR under subsection 29(2), that every licensee who becomes aware of a situation referred to in subsection (1) shall file a full report of the situation with the Commission within 21 days after becoming aware of it, unless some other period is specified in the licence, and the report shall contain the following information:

- 29(2)(a), the date, time and location of becoming aware of the situation.
- 29(2)(b), a description of the situation and the circumstances.
- 29(2)(c), the probable cause of the situation.
- 29(2)(d), the effects on the environment, the health and safety of persons and the maintenance of security that have resulted or may result from the situation.

- 29(2)(e), the effective dose and equivalent dose of radiation received by any person as a result of the situation.
- 29(2)(f), the actions that the licensee has taken or proposes to take with respect to the situation.
- It is a requirement of the UMMR under paragraphs 6(1)(a) and 6(2)(a), that an application for a licence in respect of a uranium mine and mill shall contain the results of any commissioning work.
- It is a requirement of the UMMR under paragraphs 6(1)(c) that an application for a licence in respect of a uranium mine and mill shall contain the proposed policies, methods and programs for operating and maintaining the mine.
- It is a requirement of the UMMR under subsection 10(a), that every licensee shall establish, implement and maintain written operating procedures for the licensed activity.

Safety Analysis

The regulatory foundation for the recommendation(s) associated with safety analysis includes the following:

- It is a requirement of the GNSCR under paragraph 3(1)(i) an application for a licence shall contain a description and the results of any test, analysis or calculation performed to substantiate the information included in the application.
- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the GNSCR, in relation to the environment and waste management, and (d) health and safety:
 - 3(c)(iii), effects on the environment that may result from the activity to be licensed and the measures that will be taken to prevent or mitigate those effects.
 - 3(d)(i) the effects on the health and safety of persons that may result from the activity to be licensed, and the measures that will be taken to prevent or mitigate those effects.

Physical Design

The regulatory foundation for the recommendation(s) associated with physical design includes the following:

- Paragraph 3(1)(d) of the GNSCR requires that an application for a licence shall contain a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence.
- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the GNSCR, in relation to the plan and description of the mine or mill:
 - 3(a)(ii), a surface plan indicating the boundaries of the mine or mill and the area where the activity to be licensed is proposed to be carried on.
 - 3(a)(iii), a plan showing existing and planned structures, excavations and underground development.
 - 3(a)(iv) a description of the mine or mill, including the installations, its purpose and capacity, and any excavations and underground development.
- It is a requirement of the UMMR under subsection 5(2), that an application for a licence to prepare a site for and construct a uranium mill shall contain the following information in addition to the information required by section 3 and subsection 4(2):
 - 5(2)(h), a description of all proposed laboratory facilities and programs.
- It is a requirement of the UMMR under paragraphs 6(1)(b) and 6(2)(b), that an application for a licence to operate a uranium mine and mill shall contain a description of the structures, components, systems and equipment including any changes to its design and its design operating conditions as a result of the commissioning.
- It is a requirement of the UMMR under paragraphs 16(1)(e) that every licensee shall keep a record of the design of the uranium mine or mill and of the components and systems installed at the mine or mill.

Radiation Protection

The regulatory foundation for the recommendation(s) associated with radiation protection includes the following:

- The [GNSCR](#) require, under subsection 3(1), that a licence application contain the following information under paragraphs:
 - 3(1)(e), the proposed measures to ensure compliance with the [RPR](#).
 - 3(1)(f), any proposed action level for the purpose of section 6 of the RPR.
- The GNSCR require, under subsection 17(b), that a worker comply with the measures established by the licensee to protect the environment and the health and safety of persons, maintain security, control the levels and doses of radiation, and control releases of radioactive nuclear substances and hazardous substances into the environment.
- It is a requirement for uranium mines and mills licensee to follow the RPR.
- It is a requirement of the [UMMR](#) under subsection 4(2), that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain a proposed code of practice that includes:
 - 4(2)(a), any action level that the applicant considers appropriate for the purpose of this subsection.
 - 4(2)(b), a description of any action that the applicant will take if an action level is reached.
 - 4(2)(c), the reporting procedures that will be followed if an action level is reached.
- It is a requirement of the UMMR under section 9, that every licensee shall post a copy of the code of practice referred to in the licence at a location within the uranium mine or mill that is accessible to all workers and where it is most likely to come to their attention.
- It is a requirement of the UMMR under section 13, that no licensee shall rely on the use of a respirator to comply with the RPR unless the use of the respirator:
 - 13(a), is for a temporary or unforeseen situation.
 - 13(b), is permitted by the code of practice referred to in the licence.

- It is a requirement of the UMMR under section 14, that every licensee shall:
 - 14(a), post signs at all entrances to each area where the dose rate of gamma radiation exceeds 25 $\mu\text{Sv/h}$, designating the area as a radiation area and indicating the dose rate of gamma radiation in that area.
 - 14(b), provide every worker who is to enter an area where the dose rate of gamma radiation exceeds 100 $\mu\text{Sv/h}$ with a direct-reading dosimeter.
- It is a requirement of the UMMR under subsection 16(1), that every licensee shall keep a record of:
 - 16(1)(f), the method and relevant data used to ascertain the doses of radiation received by the workers at the uranium mine or mill and the intake of radioactive nuclear substances by those workers.

Conventional Health and Safety

The regulatory foundation for the recommendation(s) associated with conventional health and safety includes the following:

- The [GNSCR](#) require, under paragraph 12(1)(c), that every licensee shall take all reasonable precautions to protect the environment and the health and safety of persons and to maintain the security of nuclear facilities and of nuclear substances.
- The GNSCR require, under subsection 16(1), that every licensee shall make available to all workers the health and safety information with respect to their workplace that has been collected by the licensee in accordance with the Act, the regulations made under the Act and the licence.
- It is a requirement of the GNSCR under section 17, that every worker shall:
 - 17(a), use equipment, devices, facilities and clothing for protecting the environment or the health and safety of persons, or for determining doses of radiation, dose rates or concentrations of radioactive nuclear substances, in a responsible and reasonable manner and in accordance with the Act, the regulations made under the Act and the licence.
 - 17(b), comply with the measures established by the licensee to protect the environment and the health and safety of persons, maintain security, control the levels and doses of radiation, and control releases of radioactive nuclear substances and hazardous substances into the environment.

- 17(c)(i), promptly inform the licensee or the worker's supervisor of any situation in which the worker believes there may be a significant increase in the risk to the environment or the health and safety of persons.
 - 17(e), take all reasonable precautions to ensure the worker's own safety, the safety of the other persons at the site of the licensed activity, the protection of the environment, the protection of the public and the maintenance of the security of nuclear facilities and of nuclear substances.
- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the GNSCR, in relation to health and safety:
 - 3(d)(i), the effects on the health and safety of persons that may result from the activity to be licensed, and the measures that will be taken to prevent or mitigate those effects.
 - 3(d)(ii), the proposed program for selecting, using and maintaining personal protective equipment.
 - 3(d)(iii), the proposed worker health and safety policies and programs.

Environmental Protection

The regulatory foundation for the recommendation(s) associated with environmental protection includes the following:

The [GNSCR](#), under paragraphs 12(1)(c) and (f), require that each licensee take all reasonable precautions to protect the environment and the health and safety of persons, and to control the release of radioactive nuclear substances and hazardous substances within the site of the licensed activity and into the environment.

The [RPR](#) prescribe dose limits for the general public, which under subsection 1(3) is 1 mSv per calendar year.

- It is a requirement of the GNSCR under section 17, that every worker shall:
 - 17(a), use equipment, devices, facilities and clothing for protecting the environment or the health and safety of persons, or for determining doses of radiation, dose rates or concentrations of radioactive nuclear substances, in a responsible and reasonable manner and in accordance with the Act, the regulations made under the Act and the licence.

- 17(b), comply with the measures established by the licensee to protect the environment and the health and safety of persons, maintain security, control the levels and doses of radiation, and control releases of radioactive nuclear substances and hazardous substances into the environment.
- 17(c)(i), promptly inform the licensee or the worker's supervisor of any situation in which the worker believes there may be a significant increase in the risk to the environment or the health and safety of persons.
- 17(e), take all reasonable precautions to ensure the worker's own safety, the safety of the other persons at the site of the licensed activity, the protection of the environment, the protection of the public and the maintenance of the security of nuclear facilities and of nuclear substances.
- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by subsection 3(c) of the GNSCR, in relation to the environment and waste management:
 - 3(c)(ii), the program to determine the environmental baseline characteristics of the site and the surrounding area.
 - 3(c)(iii), effects on the environment that may result from the activity to be licensed and the measures that will be taken to prevent or mitigate those effects.
 - 3(c)(iv), the proposed positions for and qualifications and responsibilities of environmental protection workers.
 - 3(c)(v), the proposed environmental protection policies and programs.
 - 3(c)(vi), the proposed effluent and environmental monitoring programs.
 - 3(c)(vii), the proposed location, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including its physical, chemical and radiological characteristics.
 - 3(c)(viii), the proposed measures to control releases of nuclear substances and hazardous substances into the environment.

- 3(c)(ix), a description of the anticipated liquid and solid waste streams within the mine or mill, including the ingress of fresh water and any diversion or control of the flow of uncontaminated surface and ground water.
- It is a requirement of the UMMR under subsection 4(2), that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain a proposed code of practice that includes:
 - 4(2)(a), any action level that the applicant considers appropriate for the purpose of this subsection.
 - 4(2)(b), a description of any action that the applicant will take if an action level is reached.
 - 4(2)(c), the reporting procedures that will be followed if an action level is reached.
- It is a requirement of the UMMR under section 9, that every licensee shall post a copy of the code of practice referred to in the licence at a location within the uranium mine or mill that is accessible to all workers and where it is most likely to come to their attention.

The CNSC licence for MLO licence requires Orano to control, monitor and record releases of effluent concentrations from the facility and that the releases shall not exceed the limits found in the licence.

Emergency Management and Fire Protection

The regulatory foundation for the recommendation(s) associated with emergency management and response includes the following:

- It is a requirement of the GNSCR under subsection 12(1) that every licensee shall:
 - 12(1)(c), take all reasonable precautions to protect the environment and the health and safety of persons and to maintain security of nuclear facilities and of nuclear substances.
 - 12(1)(f), take all reasonable precautions to control the release of radioactive nuclear substances or hazardous substances within the site of the licensed activity and into the environment of the licensed activity.
- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon,

shall contain the following information in addition to the information required by subsection 3(a) of the GNSCR, in relation to the plan and description of the mine or mill:

- 3(a)(ix), a description of the proposed emergency power systems and its capacities.
- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by subsection 3(c) of the GNSCR, in relation to the environment and waste management:
 - 3(c)(viii), the proposed measures to control releases of nuclear substances and hazardous substances into the environment.
 - 3(c)(x), the proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons and the maintenance of security, including measures to:
 - 3(c)(x)(A), assist off-site authorities in planning and preparing to limit the adverse effects of an accidental release.
 - 3(c)(x)(B), notify off-site authorities of an accidental release or the imminence of an accidental release.
 - 3(c)(x)(C), report information to off-site authorities during and after an accidental release.
 - 3(c)(x)(D), assist off-site authorities in dealing with the adverse effects of an accidental release.
 - 3(c)(x)(E), test the implementation of the measures to control the adverse effects of an accidental release.

Waste Management

The regulatory foundation for the recommendation(s) associated with waste management includes the following:

- It is a requirement of the General Nuclear Safety and Control Regulations under paragraph 3(1)(j) that an application for a licence include the name, quantity, form and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste.

- It is a requirement of the Uranium Mines and Mills Regulations under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the General Nuclear Safety and Control Regulations, (c) in relation to the environment and waste management:
 - 3(c)(ix), a description of the anticipated liquid and solid waste streams within the mine or mill, including the ingress of fresh water and any diversion or control of the flow of uncontaminated surface and ground water. It is a requirement of the *Uranium Mines and Mills Regulations* under subsection 6(1), that an application for a licence to operate a uranium mine shall contain the following information in addition to the information required by section 3 and subsection 4(2):
 - 6(1)(c), the proposed policies, methods and programs for operating and maintaining the mine.
- It is a requirement of the *Uranium Mines and Mills Regulations* under subsection 5(2), that an application for a licence to prepare a site for and construct a uranium mill shall contain the following information in addition to the information required by section 3 and subsection 4(2):
 - 5(2)(f), a description of the proposed design, construction and operation of the waste management system, including the measures to monitor its construction and operation, the construction schedule, the contingency plans for construction and the measures to control the movement of water in existing waterways.
- It is a requirement of the Uranium Mines and Mills Regulations under subsection 6(2), that an application for a licence to operate a uranium mill shall contain the following information in addition to the information required by section 3 and subsection 4(2):
 - 6(2)(c), the proposed policies, methods and programs for operating and maintaining the mill.
 - 6(2)(g), a description of the proposed operation of the waste management system.
- It is a requirement of the Uranium Mines and Mills Regulations under subsection 16(1), that every licensee shall keep a record of:
 - 16(1)(d), the plans of every tailings-containment structure and area and every diversion structure and system associated with the waste management system.

Security

The regulatory foundation for the recommendation(s) associated with security includes the following:

- It is a requirement of the General Nuclear Safety and Control Regulations under subsection 3(1), that an application for a licence shall contain the following information:
 - 3(1)(g), the proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment or prescribed information.
 - 3(1)(h), the proposed measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information.
- It is a requirement of the General Nuclear Safety and Control Regulations under subsection 12(1), that every licensee shall:
 - 12(1)(g), implement measures for alerting the licensee to the illegal use or removal of a nuclear substance, prescribed equipment or prescribed information, or the illegal use of a nuclear facility.
 - 12(1)(h), implement measures for alerting the licensee to acts of sabotage or attempted sabotage anywhere at the site of the licensed activity.
- It is a requirement of the General Nuclear Safety and Control Regulations under section 17, that every worker shall:
 - 17(c), promptly inform the licensee or the worker's supervisor of any situation in which the worker believes there may be;
 - 17(c)(ii), a threat to the maintenance of the security of nuclear facilities and of nuclear substances or an incident with respect to such security.
 - 17(c)(iv), an act of sabotage, theft, loss or illegal use or possession of a nuclear substance, prescribed equipment or prescribed information.
- It is a requirement of the General Nuclear Safety and Control Regulations under subsection 29(1), that every licensee who becomes aware of any of the following situations shall immediately make a preliminary report to the Commission of the location and circumstances of the situation and of any action that the licensee has taken or proposes to take with respect to it:
 - 29(1)(f), information that reveals the incipient failure, abnormal degradation or weakening of any component or system at the site of the licensed activity, the failure of which could have a serious adverse effect on the environment or constitutes or is likely to constitute or contribute to a serious risk to the health and safety of persons or the maintenance of security.
 - 29(1)(g), an actual, threatened or planned work disruption by workers.

- It is a requirement of the General Nuclear Safety and Control Regulations under subsection 29(2), that every licensee who becomes aware of a situation referred to in subsection (1) shall file a full report of the situation with the Commission within 21 days after becoming aware of it, unless some other period is specified in the licence, and the report shall contain the following information:
 - 29(2)(d), the effects on the environment, the health and safety of persons and the maintenance of security that have resulted or may result from the situation.
- It is a requirement of the Uranium Mines and Mills Regulations under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the General Nuclear Safety and Control Regulations:
 - 3(e) in relation to security, the proposed measures to alert the licensee to acts of sabotage or attempted sabotage at the mine or mill.

Safeguards and Non- Proliferation

The regulatory foundation for the recommendation(s) associated with safeguards and non-proliferation includes the following:

- It is a requirement of the GNSCR under paragraph 12(1)(i) that each licensee take all necessary measures to facilitate Canada's compliance with any applicable safeguards agreement.
- Under subsection 21(1) of the GNSCR, information that concerns any of the following, including a record of that information, is prescribed information for the purposes of the Act:
 - 21(1)(a), a nuclear substance that is required for the design, production, use, operation or maintenance of a nuclear weapon or nuclear explosive device, including the properties of the nuclear substance.
 - 21(1)(b), the design, production, use, operation or maintenance of a nuclear weapon or nuclear explosive device.
 - 21(1)(c), the security arrangements, security equipment, security systems and security procedures established by a licensee in accordance with the Act, the regulations made under the Act or the licence, and any incident relating to security.
 - 21(1)(d), the route or schedule for the transport of Category I, II or III nuclear material, as defined in section 1 of the Nuclear Security Regulations.
- It is a requirement of the GNSCR under subsection 30(1), that every licensee who becomes aware of any of the following situations shall immediately make a

preliminary report to the Commission of the situation and of any action that the licensee has taken or proposes to take with respect to it:

- 30(1)(a), interference with or an interruption in the operation of safeguards equipment or the alteration, defacement or breakage of a safeguards seal, other than in accordance with the safeguards agreement, the Act, the regulations made under the Act or the licence.
- 30(1)(b), the theft, loss or sabotage of safeguards equipment or samples collected for the purpose of a safeguards inspection, damage to such equipment or samples, or the illegal use, possession, operation or removal of such equipment or samples.
- It is a requirement of the GNSCR under subsection 30(2), that every licensee who becomes aware of a situation referred to in subsection (1) shall file a full report of the situation with the Commission within 21 days after becoming aware of it, unless some other period is specified in the licence, and the report shall contain the following information:
 - 30(2)(a), the date, time and location of becoming aware of the situation.
 - 30(2)(b), a description of the situation and the circumstances.
 - 30(2)(c), the probable cause of the situation.
 - 30(2)(d), the adverse effects on the environment, the health and safety of persons and the maintenance of national and international security that have resulted or may result from the situation.

The Agreement between the Government of Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the [*Treaty on the Non-Proliferation of Nuclear Weapons*](#).

The Protocol Additional to the Agreement between Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the *Treaty on the Non-Proliferation of Nuclear Weapons*.

Packaging and Transport

Orano is required to comply with the *Packaging and Transport of Nuclear Substances Regulations, 2015*, and Transport Canada's *Transportation of Dangerous Goods Regulations*.

Decommissioning Strategy and Financial Guarantees

The regulatory foundation for the recommendation(s) associated with Orano's MLO post-decommissioning financial guarantees includes:

The [GNSCR](#) requires under paragraph 3(1)(l) that a licence application contains a description of any proposed financial guarantee relating to the activity to be licensed.

- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the GNSCR, in relation to the plan and description of the mine or mill:
 - 3(a)(viii), the proposed plan for the decommissioning of the mine or mill.

Licensee's Public Information Program

- It is a requirement of the UMMR under section 3, that an application for a licence in respect of a uranium mine or mill, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the GNSCR, in relation to the environment and waste management:
 - 3(c)(i), the program to inform persons living in the vicinity of the mine or mill of the general nature and characteristics of the anticipated effects of the activity to be licensed on the environment and the health and safety of persons.

A2: Detailed Summary of CNSC Assessment of Application

CNSC's staff assessment of Orano's licence application included a completeness check, a sufficiency check, and a technical assessment against regulatory requirements. The completeness check verified whether the application included the prescribed information in accordance with the [Nuclear Safety and Control Act](#) and applicable regulations. For all facilities (i.e., Class I and Class II facilities), it is important to consider and address all licence application requirements within the applicable CNSC regulations.

The sufficiency check verified whether the application included sufficient and quality information in order for CNSC staff to conduct the technical assessment. The technical assessment verified whether the application included adequate safety and control measures to address CNSC requirements. Documents originally submitted as part of the application may have been revised, updated, or replaced over the course of the assessment to address CNSC requirements.

Pursuant to Section 3 of the General Nuclear Safety and Control Regulations Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by Orano	Complete?	Sufficient?	Adequate?
(1) An application for a licence shall contain the following information:	Integrated Management System (IMS)	Y	Y	Y
(a) the applicant's name and business address;	Facility Description Manual (FDM), IMS	Y	Y	Y
(b) the activity to be licensed and its purpose;	FDM, IMS	Y	Y	Y
(c) the name, maximum quantity, and form of any nuclear substance to be encompassed by the licence;	FDM, IMS	Y	Y	Y

Pursuant to Section 3 of the <u>General Nuclear Safety and Control Regulations</u> Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by Orano	Complete?	Sufficient?	Adequate?
(d) a description of any nuclear facility, prescribed equipment, or prescribed information to be encompassed by the licence;	FDM	Y	Y	Y
(e) the proposed measures to ensure compliance with the <u>Radiation Protection Regulations</u> , the <u>Nuclear Security Regulations</u> and the <u>Packaging and Transport of Nuclear Substances Regulations, 2015</u> ;	IMS, Radiation Code of Practice (RCOP)	Y	Y	Y
(f) any proposed action level for the purpose of section 6 of the <u>Radiation Protection Regulations</u> ;	IMS, RCOP	Y	Y	Y

Pursuant to Section 3 of the <u>General Nuclear Safety and Control Regulations</u> Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by Orano	Complete?	Sufficient?	Adequate?
(g) the proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment, or prescribed information;	FDM, IMS	Y	Y	Y
(h) the proposed measures to prevent loss or illegal use, possession, or removal of the nuclear substance, prescribed equipment, or prescribed information;	IMS	Y	Y	Y
(i) a description and the results of any test, analysis or calculation performed to substantiate the information included in the application;	FDM, IMS	Y	Y	Y

Pursuant to Section 3 of the <u>General Nuclear Safety and Control Regulations</u> Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by Orano	Complete?	Sufficient?	Adequate?
(j) the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste;	FDM, IMS	Y	Y	Y
(k) the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the [NSCA] and the regulations made under it, including the internal allocation of functions, responsibilities and authority;	IMS	Y	Y	Y

Pursuant to Section 3 of the <u>General Nuclear Safety and Control Regulations</u> Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by Orano	Complete?	Sufficient?	Adequate?
(l) a description of any proposed financial guarantee relating to the activity to be licensed;	Preliminary Decommissioning Plan (PDP) and Financial Assurance (FA)	Y	Y	Y
(m) any other information required by the [NSCA] or the regulations made under it for the activity to be licensed and the nuclear substance, nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence.	FDM, IMS	Y	Y	Y

A3: Technical Basis

The technical basis for the recommendations, including several guidance documents, national standards and regulatory documents has been presented in this CMD are listed in the table below and is also addressed in detail in the LCH for MLO.

Applicable Standards and Codes per Safety and Control Area

SCA	Document Title	Sufficient?	Adequate?
Management System	CSA N286-12, <i>Management system requirements for nuclear facilities</i> CSA N286.0.1:21, <i>Commentary on N286-12, Management system requirements for nuclear facilities</i>	Y	Y
Human Performance Management	REGDOC-2.2.2, <i>Personnel Training</i> , version 2	Y	Y
Operating Performance	REGDOC-2.3.1, <i>Conduct of Licensed Activities: Construction and Commissioning</i>	Y	Y
Safety Analysis	N/A	N/A	N/A
Physical Design	REGDOC-2.5.1	Y	Y
Fitness for Service	N/A	N/A	N/A
Radiation Protection	REGDOC-2.7.1, <i>Radiation Protection</i> , version 1.1 REGDOC-2.7.2, <i>Dosimetry</i> , Volume I: <i>Ascertaining Occupational Dose</i>	Y	Y
Conventional Health and Safety	REGDOC-2.8.1, <i>Conventional Health and Safety</i>	Y	Y
Environmental Protection	REGDOC-2.9.1, <i>Environmental Protection: Environmental Principles, Assessments and Protection Measures</i> , version 1.2 REGDOC-2.9.2, <i>Controlling Releases to the Environment</i>	Y	Y

SCA	Document Title	Sufficient?	Adequate?
	N288.0, <i>Environmental management of nuclear facilities: Common requirements of the CSA N288 series of Standards</i> N288.4, <i>Environmental monitoring programs at nuclear facilities and uranium mines and mills</i> N288.5, <i>Effluent monitoring programs at nuclear facilities and uranium mines and mills facilities</i> N288.6, <i>Environmental risk assessment at nuclear facilities and uranium mines and mills</i> N288.7, <i>Groundwater protection and monitoring programs at nuclear facilities and uranium mines and mills</i> N288.8, <i>Establishing and implementing action levels for releases to the environment from nuclear facilities</i>		
Emergency Management and Fire Protection	REGDOC-2.10.1, <i>Nuclear Emergency Preparedness and Response, version 2</i> N393-22, <i>Fire protection for facilities that process, handle, or store nuclear substances</i> <i>National Fire Code of Canada</i>	Y	Y
Waste Management	REGDOC-2.11.1, <i>Waste Management, Volume I: Management of Radioactive Waste</i> REGDOC-2.11.1, <i>Waste Management, Volume II: Management of Uranium Mine Waste Rock and Mill Wailings</i> REGDOC-2.11.2, <i>Decommissioning</i>	Y	Y
Security	REGDOC-2.12.3, <i>Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material</i>	Y	Y

SCA	Document Title	Sufficient?	Adequate?
Safeguards and Non-Proliferation	REGDOC-2.13.1, <i>Safeguards and Nuclear Material Accountancy</i>	Y	Y
Packaging and Transport	REGDOC-2.14.1, <i>Packaging and Transport, Volume II: Radiation Protection program Design for the Transport of Nuclear Substances</i> REGDOC-2.14.1, <i>Information Incorporated by Reference in Canada's Packaging and Transport of Nuclear Substances Regulations, 2015, Volume 1, Version 2</i>	Y	Y
Public Information Program	REGDOC-3.2.1, <i>Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills</i>	Y	Y
Indigenous Consultation and Engagement	REGDOC-3.2.2, <i>Indigenous Engagement</i>	Y	Y
Financial Guarantee	REGDOC-3.3.1, <i>Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities</i>	Y	Y

A4: Specific Areas for this Facility Type

The following table identifies the specific areas that comprise each SCA for Orano's McClean Lake Operation.

SPECIFIC AREAS FOR THIS FACILITY TYPE		
Functional Area	Safety and Control Area	Specific Areas
Management	Management System	- Management System - Organization - Performance Assessment, Improvement and Management Review - Change Management - Safety Culture - Records Management - Contractor Management Program
	Human Performance Management	Personnel Training
	Operating Performance	Not addressed individually
Facility and Equipment	Safety Analysis	Hazard Analysis
	Physical Design	Not addressed individually
	Fitness for Service	Not addressed individually
Core Control Processes	Radiation Protection	- Application of ALARA - Worker Dose Control - Radiation Protection Program Performance - Radiological Hazard Control
	Conventional Health and Safety	- Performance - Practices - Awareness

SPECIFIC AREAS FOR THIS FACILITY TYPE		
Functional Area	Safety and Control Area	Specific Areas
	Environmental Protection	▪ Effluent and Emissions Control (releases) ▪ Environmental Management System (EMS) ▪ Assessment and Monitoring ▪ Protection of People ▪ Environmental Risk Assessment
	Emergency Management and Fire Protection	▪ Emergency Preparedness and Response ▪ Fire Emergency Preparedness and Response
	Waste Management	▪ Waste Rock Piles ▪ Tailings Management Facilities ▪ Solid and Liquid Wastes ▪ Decommissioning Plans
	Security	▪ Not addressed individually
	Safeguards and Non-Proliferation	▪ Not addressed individually
	Packaging and Transport	▪ Not addressed individually

APPENDIX B:

Indigenous Nations, communities and organizations that have traditional and/or treaty territories and/or interests within proximity to the licensed facilities

Facility	Indigenous Nations, communities and/or organizations
McClean Lake Operation	• Métis Nation-Saskatchewan • Ya' thi Néné Lands and Resources • Northern Engagement, Government Relations • Kineepik Métis Local • Fond du Lac Denesūliné First Nation • Birch Narrows First Nation • Buffalo River Dene Nation • English River First Nation

APPENDIX C:

Proposed Licence Changes

Overview

There are no changes to the licence conditions or format. The licence period is recommended for a 2-year period.

Licence Conditions

There are no changes to the existing licence conditions.

Licence Format

No further changes to the licence format are proposed at this time.

Licence Period

Orano has requested a renewal of its licence for a 2-year period. CNSC staff are recommending that the Commission approve the renewal of the CNSC-issued licence for the MLO for a 2-year period. CNSC staff have concluded that a 2-year licence period is acceptable following an assessment of Orano's application and supporting documents and considering Orano's satisfactory performance history across all SCAs during the current licence period.

Current Licence

The current licence is provided on the following pages of this document.

E-Doc 6520597 (PDF)

[UFAU4ACC6FJU-187144591-9](#)



**URANIUM MINE LICENCE
ORANO CANADA INC.
McCLEAN LAKE OPERATION**

- I) LICENCE NUMBER:** UML-MINEMILL-McCLEAN.02/2027
- II) LICENSEE:** Pursuant to section 24 of the *Nuclear Safety and Control Act*, this licence is issued to:
- Orano Canada Inc.**
100 – 833 45th Street West
Saskatoon, Saskatchewan S7L 5X2
- III) LICENCE PERIOD:** This licence is valid from July 1, 2017 to June 30, 2027, unless suspended, amended, revoked or replaced.
- IV) LICENSED ACTIVITIES:**
- This licence authorizes the licensee to:
- a) operate and modify a nuclear facility (hereinafter, “the facility”) for the mining of uranium ore and the production of uranium concentrate at a site known as the McClean Lake Operation in the province of Saskatchewan, as shown on the drawing referenced in appendix A to this licence
 - b) modify the outer perimeter of the JEB Tailings Management Facility for the vertical expansion up to 468 metres above sea level (mASL) and to accommodate disposal of tailings up to a consolidated tailings elevation of 462 mASL
 - c) mine a nuclear substance (uranium ore)
 - d) produce a uranium concentrate
 - e) import, possess, use, store, transfer and dispose of nuclear substances and radiation devices that are required for or associated with laboratory studies, field studies, fixed gauge use and borehole logging devices.

V) EXPLANATORY NOTES:

- a) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and its associated Regulations.
- b) The McClean Lake Operation Licence Conditions Handbook (LCH) identifies the criteria used to meet the conditions of this licence. The LCH also provides information regarding delegation of authority and document version control.

VI) CONDITIONS:**G. GENERAL****G.1 Licensing Basis for Licensed Activities**

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

- (i) the regulatory requirements set out in the applicable laws and regulations
- (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence
- (iii) the safety and control measures described in the licence application and the documents needed to support that licence application

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

G.2 Notification of Changes

The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 Financial Guarantee

The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.4 Public Information and Disclosure

The licensee shall implement and maintain a public information and disclosure program.

1. MANAGEMENT SYSTEM**1.1 Management System**

The licensee shall implement and maintain a management system.

1.2 Management of Contractors

The licensee shall ensure that every contractor working at the facility complies with this licence.

2. HUMAN PERFORMANCE MANAGEMENT**2.1 Training Program**

The licensee shall implement and maintain a training program.

3. OPERATING PERFORMANCE**3.1 Operations Program**

The licensee shall implement and maintain an operating program, which includes a set of operating limits.

3.2 Reporting Requirements

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

3.3 Nuclear Substances and Radiation Devices

The licensee shall implement and maintain a program for nuclear substances and radiation devices.

4. SAFETY ANALYSIS**4.1 Safety Analysis Program**

The licensee shall implement and maintain a safety analysis program.

5. PHYSICAL DESIGN**5.1 Design Program**

The licensee shall implement and maintain a design program.

6. FITNESS FOR SERVICE**6.1 Fitness for Service Program**

The licensee shall implement and maintain a fitness for service program.

7. RADIATION PROTECTION**7.1 Radiation Protection Program**

The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within 24 hours.

8. CONVENTIONAL HEALTH AND SAFETY**8.1 Conventional Health and Safety Program**

The licensee shall implement and maintain a conventional health and safety program.

9. ENVIRONMENTAL PROTECTION**9.1 Environmental Protection Program**

The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within 24 hours.

9.2 Reaching or Exceeding Effluent Discharge Limits

The licensee shall, where the effluent concentration reaches or exceeds the discharge limits specified in the *Metal and Diamond Mining Effluent Regulations*^[1], as amended from time to time, immediately investigate and take corrective action to ensure that the effluent concentration is maintained below the discharge limits.

10. EMERGENCY MANAGEMENT AND FIRE PROTECTION**10.1 Emergency Preparedness Program**

The licensee shall implement and maintain an emergency preparedness program.

10.2 Fire Protection Program

The licensee shall implement and maintain a fire protection program.

^[1] *Metal and Diamond Mining Effluent Regulations* (SOR/2002-222)

11. WASTE MANAGEMENT**11.1 Waste Management Program**

The licensee shall implement and maintain a waste management program.

11.2 Decommissioning Strategy

The licensee shall implement and maintain a decommissioning strategy.

12. SECURITY**12.1 Security Program**

The licensee shall implement and maintain a security program.

13. SAFEGUARDS AND NON-PROLIFERATION**13.1 Safeguards Program**

The licensee shall implement and maintain a safeguards program.

14. PACKAGING AND TRANSPORT**14.1 Packaging and Transport Program**

The licensee shall implement and maintain a packaging and transport program.

SIGNED at OTTAWA, this 13th day of January, 2022.

Velshi, Rumina

Digitally signed by Rumina Velshi
DN: cn=Velshi, Rumina
Reason: I am the author of this document
Location: your signing location here
Date: 2023.01.13 16:00:28
Full PDFViewPDF version 0.7.1

Rumina Velshi, President
on behalf of the Canadian Nuclear Safety Commission

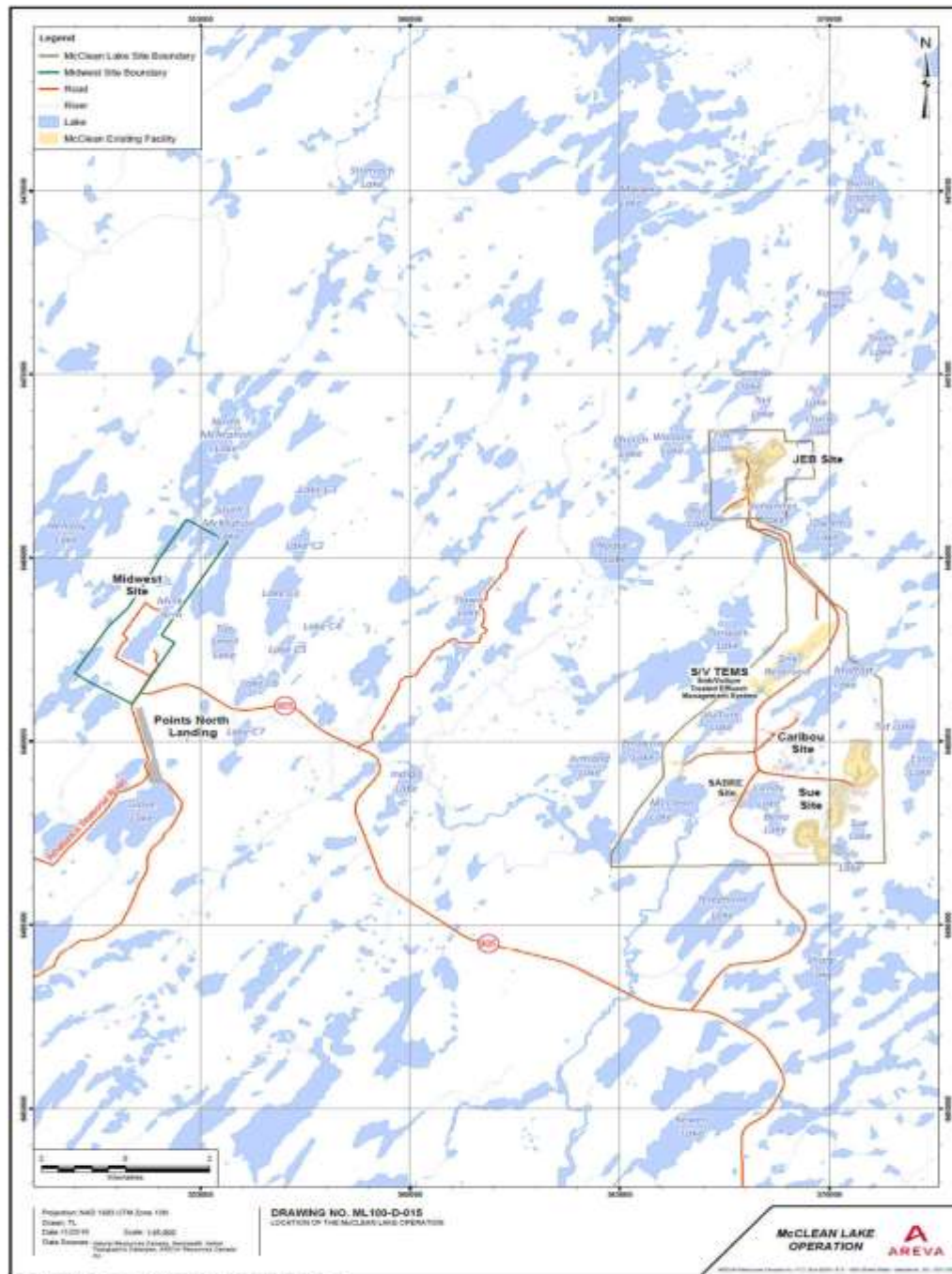
APPENDIX A

LOCATION OF THE McCLEAN LAKE OPERATION

The location of the McClean Lake Operation is shown on McClean Lake Operation Drawing No. ML100-D-015 (e-Doc 5146834).

Orano Canada Inc. – McClean Lake Operation
Uranium Mine Licence

Page 7 of 7
UML-MINEMILL-McCLEAN.02/2027



e-Doc 6514234 (Word)
e-Doc 6520597 (PDF)

Proposed Licence

The proposed licence is provided on the following pages of this document.

[MF7XPL47YX46-187144591-361](#)



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

UML-MINEMILL-McCLEAN.00/2029

Orano Canada Inc.

[TITLE OF LICENCE-FRENCH]

McClean Lake Operation Licence

I) LICENCE NUMBER UML-MINEMILL-McCLEAN.00/2029

II) LICENSEE Pursuant to subsection 24(2) of the *Nuclear Safety and Control Act*, this licence is issued to:

Orano Canada Inc.
100 – 833 45th Street West

Corporation number: 333436-8 (Saskatchewan, Canada)

III) LICENCE PERIOD

This licence is valid from: July 1, 2027 to June 30, 2029 unless otherwise suspended in whole or in part, amended, revoked, or replaced.

IV) LICENSED ACTIVITIES

In accordance with section 26 of the *Nuclear Safety and Control Act*, this licence authorizes the licensee to:

- a. operate and modify a nuclear facility (hereinafter, "the facility") for the mining of uranium ore and the production of uranium concentrate at a site known as the McClean Lake Operation in the province of Saskatchewan, as shown on the drawing referenced in appendix A to this licence
- b. modify the outer perimeter of the JEB Tailings Management Facility for the vertical expansion up to 468 metres above sea level (mASL) and to accommodate disposal of tailings up to a consolidated tailings elevation of 462 mASL
- c. mine a nuclear substance (uranium ore)
- d. produce a uranium concentrate
- e. import, possess, use, store, transfer and dispose of nuclear substances and radiation devices that are required for or associated with laboratory studies, field studies, fixed gauge use and borehole logging devices.

V) CONDITIONS**G. GENERAL****G.1 Licensing Basis for Licensed Activities**

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

- (i) the regulatory requirements set out in the applicable laws and regulations
- (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence
- (iii) the safety and control measures described in the licence application and the documents needed to support that licence application

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

G.2 Notification of Changes

The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 Financial Guarantee

The licensee shall implement and maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.4 Public Information and Disclosure

The licensee shall implement and maintain a public information and disclosure program.

1. MANAGEMENT SYSTEM**1.1 Management System**

The licensee shall implement and maintain a management system.

1.2 Management of Contractors

The licensee shall ensure that every contractor working at the facility complies with this licence.

2. HUMAN PERFORMANCE MANAGEMENT**2.1 Training Program**

The licensee shall implement and maintain a training program.

3. OPERATING PERFORMANCE**3.1 Operations Program**

The licensee shall implement and maintain an operating program, which includes a set of operating limits.

3.2 Reporting Requirements

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

3.3 Nuclear Substances and Radiation Devices

The licensee shall implement and maintain a program for nuclear substances and radiation devices.

4. SAFETY ANALYSIS**4.1 Safety Analysis Program**

The licensee shall implement and maintain a safety analysis program.

5. PHYSICAL DESIGN**5.1 Design Program**

The licensee shall implement and maintain a design program.

6. FITNESS FOR SERVICE**6.1 Fitness for Service Program**

The licensee shall implement and maintain a fitness for service program.

7. RADIATION PROTECTION**7.1 Radiation Protection Program**

The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within 24 hours.

8. CONVENTIONAL HEALTH AND SAFETY**8.1 Conventional Health and Safety Program**

The licensee shall implement and maintain a conventional health and safety program.

9. ENVIRONMENTAL PROTECTION**9.1 Environmental Protection Program**

The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within 24 hours.

9.2 Reaching or Exceeding Effluent Discharge Limits

The licensee shall, where the effluent concentration reaches or exceeds the discharge limits specified in the *Metal and Diamond Mining Effluent Regulations*^[1], as amended from time to time, immediately investigate and take corrective action to ensure that the effluent concentration is maintained below the discharge limits.

10. EMERGENCY MANAGEMENT AND FIRE PROTECTION**10.1 Emergency Preparedness Program**

The licensee shall implement and maintain an emergency preparedness program.

10.2 Fire Protection Program

The licensee shall implement and maintain a fire protection program.

11. WASTE MANAGEMENT**11.1 Waste Management Program**

The licensee shall implement and maintain a waste management program.

11.2 Decommissioning Plan

The licensee shall implement and maintain a preliminary decommissioning plan.

[1] *Metal and Diamond Mining Effluent Regulations (SOR/2002-222)*

12. SECURITY**12.1 Security Program**

The licensee shall implement and maintain a security program.

13. SAFEGUARDS AND NON-PROLIFERATION**13.1 Safeguards Program**

The licensee shall implement and maintain a safeguards program.

14. PACKAGING AND TRANSPORT**14.1 Packaging and Transport Program**

The licensee shall implement and maintain a packaging and transport program.

VI) EXPLANATORY NOTES

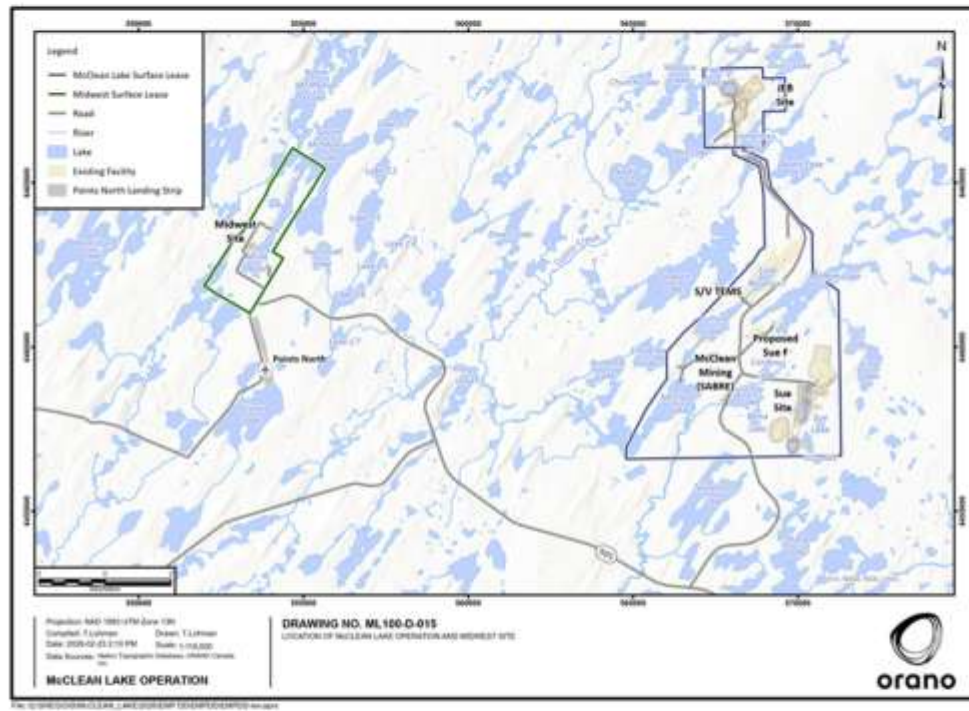
- i) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and its associated Regulations.
- ii) The McClellan Lake Operation Licence Conditions Handbook (LCH) identifies the criteria used to meet the conditions of this licence. The LCH also provides information regarding delegation of authority and document version control.

SIGNED at [city where signed] on [date signed]

Pierre F. Tremblay, President
Canadian Nuclear Safety Commission

APPENDIX A: Location of the McClean Lake Operation

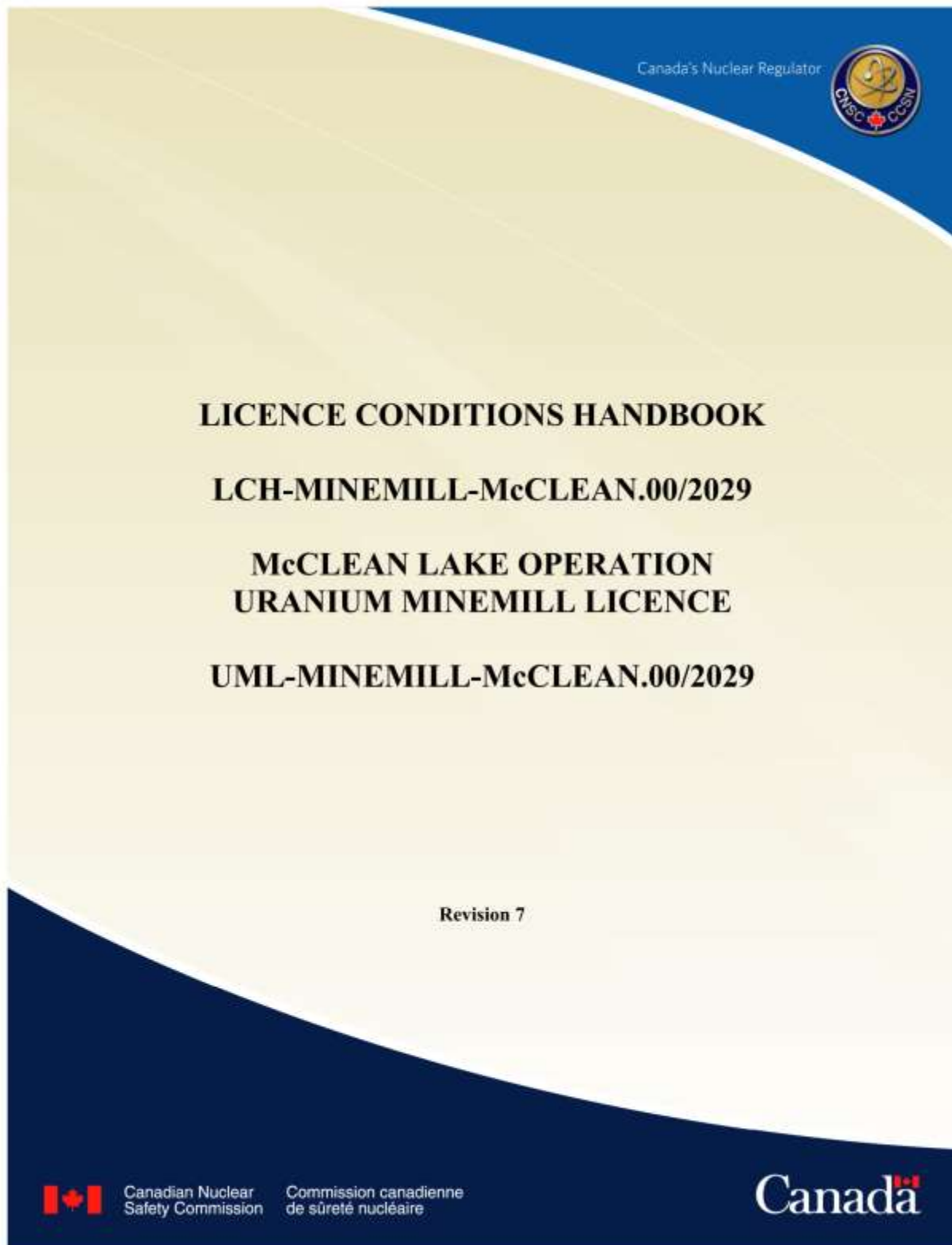
The location of the McClean Lake Operation is shown on McClean Lake Operation Drawing ML100-D-015 dated 2026-02-23.



Draft Licence Conditions Handbook

The draft Licence Conditions Handbook is provided on the following pages of this document.

[MF7XPL47YX46-187144591-376](#)



McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.0202029

Licence Conditions Handbook
LCH-MINEMILL-McCLEAN.00/2029, Revision 7

Effective: --, 2026

McClean Lake Operation
Uranium MineMill Licence
UML-MINEMILL-McCLEAN.00/2029
(Effective: July 1, 2027)

SIGNED at OTTAWA this -- day of -- 2026

Andrew McAllister, Director
Uranium Mines and Mills Division
Directorate of Nuclear Cycle and Facilities Regulation
CANADIAN NUCLEAR SAFETY COMMISSION

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.0202029

Revision History:

Effective Date	Revision	Section(s) Changed	Description of the Changes	e-Doc #
March 7, 2013	0	N/A	Original Document	3826266 (Word) 3991355 (PDF)
July 9, 2013	1		Sections changed: 2.4, 4.1, 4.3 Appendix C.1 Added information about the JEB Mill Upgrade Project Updated the versions of the Mining Facility Licensing Manual, the Radiation Protection Code of Practice and the Dosimetry Monitoring Strategy Changed name of MED Program to SABRE Project Added CVC 4.3.9, minor editorial changes made	3826266 (Word) 3991355 (PDF)
April 23, 2014	2	Sections 4.1, 4.3, 10.1, 13.1, C.1, C.2, D.2	Throughout document: Changed Document Version Control to Written Notification Documents; editorial changes Section 4.1: Added reference to Commissioning Management Plan and ore slurry storage on JEB Ore Pad Section 4.3: Added Co-60 nuclear gauges to Table of Authorized Devices Sections 10.1, 13.1, C.1, C.2, D.2: Updated references All changes recorded in e-Doc 4419950	3826266 (Word) 3991355 (PDF)
June 23, 2016	3	Sections 2.4, 3.1, C.1, C.2, D.2	Section 2.4: Added text for use of JEB Ore Pad as a contingency measure Changed annual production from 13 to 24 million pounds Section 3.1: Text modified for the sections "Compliance Verification Criteria" and "Recommendations and Guidance" to be consistent with other DNCFR facilities Section C.1: Updated reference for Radiation Code of Practice Section C.2: Documents added to the licensing basis Section D.2: REGDOC-2.2.2 added and updated reference for TPED-01 All changes recorded in e-Doc 5011984	3826266 (Word) 3991355 (PDF)
Effective	Revision	Section(s)	Description of the Changes	DCR

Licence Conditions Handbook (Comment – Add Hyperlink)

Page iii

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.0202029

Date		Changed		e-Doc
October 6, 2017	4	Sections G.1, 4.1, 9.2	Section G.1: Added text: Disposal of tailings up to 448 metres above sea level Section 4.1: Moved text related to ERA from the safety analysis SCA to the environmental protection SCA Section 9.2: Added authorized effluent discharge limits Updated licensee documents Updated licensing basis and guidance references All changes recorded in e-Doc 5171196	5171683 (Word) 5186559 (PDF) New LCH format
April 14, 2022	5	All	Updated LCH text and format after Commission approval for a licence amendment for the JEB TMF expansion to increase the height from 457.5 mASL to 468 mASL. Revised financial guarantee value.	6515760 (Word) 6520560 (PDF)
May 1, 2024	6	All	Original Document, Updated REGDOCs and CSA Group listings	7263790 (Word) 7272206 (PDF)
--, 2026	7	Throughout	Updating REGDOCs/standards references, removing e-access numbers from programs/manuals and administrative corrections	Licence Conditions Handbook

TABLE OF CONTENTS

PART I - INTRODUCTION	1
PART II – FRAMEWORK FOR EACH CONDITION.....	2
G. GENERAL	2
G.1 Licensing Basis for Licensed Activities	2
G.2 Notification of Changes	8
G.3 Financial Guarantee	9
G.4 Public Information and Disclosure	11
1. MANAGEMENT SYSTEM	12
Licence Condition 1.1	12
Licence Condition 1.2	13
2. HUMAN PERFORMANCE MANAGEMENT	14
Licence Condition 2.1	14
3. OPERATING PERFORMANCE	15
Licence Condition 3.1	15
Licence Condition 3.2	16
Licence Condition 3.3	17
4. SAFETY ANALYSIS	19
Licence Condition 4.1	19
5. PHYSICAL DESIGN	21
Licence Condition 5.1	21
6. FITNESS FOR SERVICE	22
Licence Condition 6.1	22
7. RADIATION PROTECTION	24
Licence Condition 7.1	24
8. CONVENTIONAL HEALTH AND SAFETY	26
Licence Condition 8.1	26
9. ENVIRONMENTAL PROTECTION.....	28
Licence Condition 9.1	28
Licence Condition 9.2	30
10. EMERGENCY MANAGEMENT AND FIRE PROTECTION	33
Licence Condition 10.1	33
Licence Condition 10.2	33
11. WASTE MANAGEMENT	35
Licence Condition 11.1	35
Licence Condition 11.2	37
12. SECURITY	38

McClean Lake Operation	Effective Date: --, 2026
Licence Conditions Handbook	LCH-MINEMILL-McCLEAN.0202029
Licence Condition 12.1	38
13. SAFEGUARDS AND NON-PROLIFERATION	39
Licence Condition 13.1	39
14. PACKAGING AND TRANSPORT	41
Licence Condition 14.1	41
15. FACILITY SPECIFIC	42
APPENDIX A CHANGE CONTROL PROCESS	43
APPENDIX B LICENSEE DOCUMENTS THAT REQUIRE NOTIFICATION OF CHANGE	48
APPENDIX C LIST OF DOCUMENTS USED AS GUIDANCE OR COMPLIANCE VERIFICATION CRITERIA	49

PART I - INTRODUCTION

The purpose of the licence conditions handbook (LCH) is to identify and clarify the relevant parts of the licensing basis for each licence condition (LC). This will help ensure that the licensee will maintain facility operations in accordance with the licence and the intent of the licensing basis. The LCH also provides information regarding delegation of authority, document version control and conflict resolution. The LCH should be read in conjunction with the licence.

The LCH has three parts under each LC: the Preamble, Compliance Verification Criteria (CVC), and Guidance. The Preamble explains the regulatory context, background, and/or history related to the LC. CVC are used by Canadian Nuclear Safety Commission (CNSC) staff to oversee compliance with the LC. Guidance is non-mandatory information, including direction, on how to comply with the LC.

The statement "a person authorized by the Commission" in the LCs or the LCH indicates that the Commission may delegate certain authority to CNSC staff. Unless otherwise specified, the delegation of authority by the Commission to act as a person authorized by the Commission (Delegated Officer) is only applied to incumbents in the following positions¹:

- Director, Uranium Mines and Mills Division
- Director General, Directorate of Nuclear Cycle and Facilities Regulation
- Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch

¹ Record of Decision, Commission Hearing 26-H105, In the Matter of Orano Canada Inc., Application to Renew the McClean Lake Operation Uranium Mine Operating Licence, --, 2026, dated --, 2026.

INTRODUCTION

Licence Conditions Handbook (Comment – Add hyperlink) applicable throughout the document

Page 1 of 51

PART II – FRAMEWORK FOR EACH LICENCE CONDITION

G. GENERAL

G.1 Licensing Basis for Licensed Activities

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

- (i) the regulatory requirements set out in the applicable laws and regulations
- (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence
- (iii) the safety and control measures described in the licence application and the documents needed to support that licence application

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

Preamble

Licence condition G.1 requires activities (defined in Part IV of the licence) be conducted in accordance with the licensing basis. Further information on the licensing basis is available in CNSC regulatory document, REGDOC-3.5.3, *Regulatory Fundamentals*.

The licensing basis, established by the Commission at the time the licence is issued, sets the boundary conditions for a regulated activity, and establishes the basis for the CNSC's compliance program for that regulated activity.

Part (i) of licence condition G.1 includes, but is not limited to, the following:

- *Nuclear Safety and Control Act (NSCA)*
- *General Nuclear Safety and Control Regulations (GNSCR)*
- *Uranium Mines and Mills Regulations*
- *Radiation Protection Regulations*
- *Packaging and Transport of Nuclear Substances Regulations, 2015*
- *Nuclear Substances and Radiation Devices Regulations*
- *Metal and Diamond Mining Effluent Regulations*
- *Canada/International Atomic Energy Agency (IAEA) Safeguards Agreements*

GENERAL

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

The safety and control measures mentioned under Parts (ii) and (iii) of licence condition G.1 have the potential to affect the health and safety of people, the environment, security or international obligations to which Canada agrees. These measures may be found in high-level programmatic documents but might also be found in lower level supporting documentation. Safety and control measures can also be found in licensing basis publications such as CNSC regulatory documents, CSA Group standards or licensee documentation submitted in support of a licence.

The CNSC licence authorizes Orano Canada Inc. (Orano) to conduct the following undertakings at the McClean Lake Operation, for which the CNSC provides regulatory oversight:

- operation and changes to the mill and associated site infrastructure within the objective of the licensing basis to produce up to a nominal annual production of 10,909,090 kilograms (24 million pounds) of uranium concentrate (U_3O_8) per year
- mining of uranium ore
- receive and process Cameco Corporation's Cigar Lake Operation's mine ore slurry
- modify the outer perimeter of the JEB Tailings Management Facility (TMF) for the vertical expansion up to 468 metres above sea level (mASL) and to accommodate disposal of tailings up to a consolidated tailings elevation of 462 mASL
- operation of the JEB dewatering and water management systems and the JEB water treatment plant (JEB WTP)
- operation of the Sue water treatment plant (Sue WTP)
- operation of the Sink/Vulture treated effluent management system (S/V TEMS)
- care and maintenance of the Midwest Project site
- management of clean and special waste rock
- operation of the Surface Access Borehole Resource Extraction (SABRE) mining method to mine the ore and process at the McClean Lake mill to produce uranium concentrate
- handling and storage of hazardous materials and disposal of hazardous wastes
- possession, storage, transfer, importation, use and disposal of nuclear substances and radiation devices

Orano is required to provide prior notification to the CNSC before processing other ore sources or increasing the annual production rate above 10,909,090 kilograms (24 million pounds) of uranium concentrate per year so that it can be verified that the proposed activities meet CNSC requirements and remain within the licensing basis for the McClean Lake Operation.

There are no active open pit mines at McClean Lake; however, environmental assessments have been carried out for the mining of the Midwest and Sue F (formerly Caribou) ore bodies. Prior to constructing or operating a mine for these ore bodies or future ore bodies, Orano is required to apply for a licence amendment and or a licence to Prepare Site, Construct and Operate. Orano is also required to submit detailed construction and operating plans, designs and programs for mining the ore body or ore bodies to the CNSC so that it can be verified that the proposed activities meet CNSC requirements.

GENERAL

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 3 of 51

CNSC Staff Follow-up

Orano will undertake the following activities in relation to the JEB TMF expansion as documented in the Record of Decision²:

- Monitor groundwater quality at wells close to the JEB TMF to provide an early performance indicator of the contaminant plume migration, the groundwater contaminants of potential concern (COPC) concentration predictions and the long-term COPC concentration predictions in Fox Lake and Pat Lake. If the revised COPC predictions in Fox Lake and Pat Lake are above the current long-term assessment predictions, assess risks to the receiving environment and if necessary, implement additional mitigation measures.
- Conduct a long-term assessment of the base case scenario and upper bound scenario to predict concentrations of COPCs in Fox Lake and Pat Lake sediments and assess the risk to aquatic receptors due to sediment COPC predictions. In the event that the sediment concentration predictions will result in an unreasonable risk to aquatic receptors over the long term, Orano must consider additional mitigation measures to prevent these from occurring.

For the JEB TMF decommissioning, Orano will undertake the following activities²:

- Use the probable maximum flood event (PMF), calculated from the probable maximum precipitation (PMP), for the detailed design of the drainage channel and cover in addition to consideration of potential climate change effects on the design.
- Use the results of test cover plots and the best science and engineering measures available at the detailed design stage to ensure the integrity of the cover over the long-term.

Detailed design of the cover will further assess erosion on embankment slopes and assess the need for refinement which could include flattening surface gradients and/or drainage distances of the decommissioned JEB TMF slopes to meet the design criterion of "permanent walk-away closure", taking into consideration that the decommissioned JEB TMF is a tailings disposal facility and not a natural drumlin feature.

- Submit a revision to the cover erosion scenario; to be conducted during detailed decommissioning planning and/or detailed design stages justifying the 6-metre wide by 3-metre deep (6 m x 3 m) gully selected as the bounding case in the 2021 cover erosion scenario, and that erosion beyond the barrier layer and exposure of the tailings is unlikely.

² Record of Decision, DEC 21-H6, In the Matter of Orano Canada Inc., Application to Amend Uranium Mine and Mill Licence for the Expansion of the JEB Tailings Management Facility, dated January 12, 2022 (e-Doc 6706444).

- Provide a detailed closure landform design prior to the decommissioning of the JEB TMF.
- Develop a detailed soil cover performance monitoring program prior to decommissioning of the JEB TMF, including performance indicators to monitor the soil cover performance post decommissioning to confirm/verify that the cover is performing as designed.
- Implement a post-decommissioning Environmental Monitoring Program focussed on the surrounding and downstream environments.

GENERAL

Compliance Verification Criteria

Licensing Basis Documents

Licensing basis documents are listed in appendix B and C in addition to tables under the most relevant LC. All “shall” or normative statements in licensing basis publications are considered CVC unless stated otherwise. If any “should” or informative statements in licensing basis publications are also considered CVC, this is provided under the most relevant LC.

In the event of any inconsistency between 2 elements of the licensing basis, the licensee shall consult CNSC staff to determine the approach to resolve the issue.

For operational activities that are not in accordance with the licensing basis, the licensee shall take action as soon as practicable to return to a state that is compliant with the licensing basis, taking into account the risk significance of the situation. Reporting requirements are outlined in CNSC’s REGDOC-3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills* and discussed under LC 3.2 of this LCH.

Changes to documentation or activities that would result in operational activities not being in accordance with the licensing basis must be approved by the Commission prior to implementation.

GENERAL

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

Source	Document Title	Document Number	Prior Notification Required
Orano	McClean Lake Operation, Notification of Changes to the Leaching Circuit, 2014	4276885	Yes
Orano	McClean Lake Operation, Report on Commissioning and Restart of the McClean Lake Mill, 2015	4909213	Yes
Orano	McClean Lake Operation, Technical Information Document, Tailings Management, May 2015 and May 2020	4775706 6305787	Yes
Orano	McClean Lake Operation, Notification of Increase to McClean Lake Annual Production Rate, 2016	4932128	Yes
Orano	McClean Lake Operation, Technical Information document 2022 Environmental Performance Volume 1 of 1, September 2022	6878876	Yes
Orano	McClean Lake Operation, Environmental Performance Technical Information Document, Volume 2 of 2 – Environmental Risk Assessment, 2016 and 2017	5094511 5212962	Yes
Orano	McClean Lake Operation, Environmental Monitoring Program Design Document, December 2018, December 2022, December 2023	5748195 6930692	Yes
Orano	McClean Lake Operation, Environmental Monitoring Program Locations, Frequencies and Parameters, December 2022	6930692	Yes
Orano	McClean Lake Operation, Notification of Modification to the JEB Tailings Management Facility Expansion Project, 2016 and 2017	5020837 5186303 5200656	Yes
Orano	McClean Lake Operation, Notification of Modification to the JEB Tailings Management Facility Project to 468 mASL, November 2019	6034709	Yes
Orano	Selenium Adaptive Management Plan Update September 2020 and Response to CNSC Comments January 2021, Selenium Treatment Update July 2021	6392517 6477959 6600532	Yes

Guidance

When the licensee becomes aware that a proposed change or activity might not be in accordance with the licensing basis, it should first seek direction from CNSC staff regarding the potential acceptability of this change or activity. The licensee should take into account that certain types of proposed changes might require significant lead times before CNSC staff can make recommendations and/or the Commission can properly consider them. Guidance for notifications to the CNSC related to licensee changes are discussed under LC G.2.

GENERAL

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 7 of 51

G.2 Notification of Changes

The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

Preamble

During the course of licensed activities, it is expected that the licensee may make changes to implement improvements or to address changes in operational needs. While making these changes, it is imperative the licensee remains within the bounds of the licensing basis.

Appendix B provides a list of licensee documents that require notification of change. CNSC staff track the current version of these licensee documents separate from the LCH McClellan Licensing Basis Documents Version Control.XLS

Compliance Verification Criteria

Licensee Documents that Require Notification of Change

Changes to the design, operating conditions, policies, programs and methods that have the potential to be outside of the licensing basis require prior written notification to the CNSC. CNSC staff will confirm the change remains within the licensing basis and notify the licensee prior to implementation of the change by the licensee. The licensee shall allow sufficient time for the CNSC to review the change proportionate to its complexity and the importance of the safety and control measures being affected. Regular communication between the CNSC and the licensee should ensure review timelines are established prior to submission of written notification. It remains the responsibility of the licensee to ensure that the McClellan Lake Operation continues to operate within the bounds of the licensing basis.

Prior written notification shall include:

- a description of the change
- the rationale for the change
- expected duration (if not a permanent change)
- an explanation from the licensee supporting the conclusion that the change remains in accordance with the licensing basis.

Ongoing regular communication shall be maintained between the CNSC and licensee.

Guidance

A list of criteria to determine if a change would be in accordance with the licensing basis is provided in Appendix A of CNSC process document *Overview of: Assessing licensee changes to documents or operations* (e-Doc 4055483).

GENERAL

G.3 Financial Guarantee

The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

Preamble

The licensee is responsible for all costs of decommissioning at the facility. All such costs are included in the licensee's decommissioning cost estimates and are covered by the licensee's financial guarantee for decommissioning. The licensee's decommissioning cost estimate is provided in the facility's preliminary decommissioning plan (PDP). The facility's current financial guarantee is covered by specific financial instruments as listed below.

The latest revision of the PDP and estimation of the cost of decommissioning were finalized in Orano's *Preliminary Decommissioning Plan and Financial Assurance Preliminary Cost Estimate*, February 2026.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CSA Group	Decommissioning of Facilities Containing Nuclear Substances	N294-19
CNSC	Decommissioning	REGDOC-2.11.2
CNSC	Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities	REGDOC-3.3.1

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Facility Description Manual	Yes
Orano	Preliminary Decommissioning Plan and Financial Assurance	Yes
Orano	Bond Number M220213 for CAD \$78,971,896.28 and Irrevocable Letter of Guarantee No. 990004 for CAD \$166,664.78	Yes
Denison	Letter of Credit S18572/240359 for CAD \$22,972,050.00 Letter of Credit S18572/240346 for CAD \$48,127.00	Yes

GENERAL

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

The financial guarantee for decommissioning the McClean Lake Operation shall be reviewed and revised by the licensee every 5 years, or when required by the Commission, or following a revision of the PDP that significantly impacts the financial guarantee. The next PDP and cost estimate update is expected in 2030.

The licensee shall submit a written report to the Commission confirming that the financial instruments continue to meet the acceptance criteria of section 3 of CNSC's REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*. Any change to the type of financial instrument requires prior notification to the CNSC and acceptance. The licensee shall submit this report by the end of March of each year, or at any time as the Commission may request.

Guidance

There is no guidance provided for this licence condition.

GENERAL

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 10 of 51

G.4 Public Information and Disclosure

The licensee shall implement and maintain a public information and disclosure program.

Preamble

The public information and disclosure program ensures that information related to the health and safety of persons and the environment and other issues associated with the lifecycle of the nuclear facility is effectively communicated to the public. In addition, the program shall include a commitment to and protocol for ongoing timely communications regarding emissions, effluent releases, unplanned events and other incidents and activities related to the licensed facility that may be of interest to the public.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Public Information and Disclosure*	REGDOC-3.2.1

*In response to the February 2020 correspondence from the Canadian Nuclear Safety Commission (CNSC) to Orano (Tadros to Laniece) regarding the implementation of REGDOC 3.2.1., Orano confirmed in their letter dated July 17, 2020 that "Orano provides access to a variety of information related to its operations on the website, including factsheets, annual reports (Laniece to Tadros, e-Doc 6345029). Orano also confirmed via email dated May 12, 2026 (Schmalz to Akhter) that a link is provided on their website to download a copy of the most recently accepted ERA's.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Public Information Program	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Indigenous Engagement, Version 1.2	REGDOC-3.2.2

GENERAL

1. MANAGEMENT SYSTEM

Licence Condition 1.1

The licensee shall implement and maintain a management system.

Preamble

The “management system” safety and control area covers the framework which establishes the processes and programs required to ensure an organization achieves its safety objectives, continuously monitors its performance against these objectives and fosters a healthy safety culture.

The management system must satisfy the requirements set out in the *Nuclear Safety and Control Act* (NSCA), regulations made pursuant to the NSCA, the licence and the measures necessary to ensure that safety is of paramount consideration in implementation of the management system. An adequately established and implemented management system provides the evidence that the licensing basis remains valid.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CSA Group	Management System Requirements for Nuclear Facilities (except sections identified under other license conditions)	N286-12
CNSC	Safety Culture	REGDOC-2.1.2

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Management System	REGDOC-2.1.1

MANAGEMENT SYSTEM

Licence Condition 1.2

The licensee shall ensure that every contractor working at the facility complies with this licence.

Preamble

This LC requires that the licensee retain responsibility for the protection of the health, safety, and security of the public and workers, and the protection of environment when contractors perform licensed activities.

Compliance Verification Criteria***Licence Documents that Require Notification of Change***

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

The management of contractors shall be evaluated against the following principles:

- 1.2.1 The risks to contractors and risks to the organization from the use of contractors are evaluated to identify, assess, and eliminate or control hazards.
- 1.2.2 The duties and authorities of contractor personnel are clearly defined and documented.
- 1.2.3 When the licensee requires contractors to implement parts of the management system, the licensee is directly responsible for ensuring expectations are established, understood, and achieved.
- 1.2.4 Contractors are adequately trained on relevant licensee procedures and are qualified and competent.
- 1.2.5 Qualified and competent members of the licensees' staff maintain oversight of the contractors' performance. The oversight program is planned, defined and the results documented.
- 1.2.6 Contractor personnel are held to the same performance standards as licensee employees.

Guidance***Guidance Publications***

Source	Document Title	Document Number
CNSC	Management System	REGDOC-2.1.1

MANAGEMENT SYSTEM

2. HUMAN PERFORMANCE MANAGEMENT

Licence Condition 2.1

The licensee shall implement and maintain a training program.

Preamble

The “human performance management” safety and control area covers activities that enable effective human performance through the development and implementation of processes that ensure a sufficient number of licensee workers are in all relevant job areas and have the necessary knowledge, skills, procedures and tools in place to safely perform their duties.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Personnel Training, Version 2	REGDOC-2.2.2

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Human Performance, Version 2	REGDOC-2.2.1

HUMAN PERFORMANCE MANAGEMENT

3. OPERATING PERFORMANCE

Licence Condition 3.1

The licensee shall implement and maintain an operating program, which includes a set of operating limits.

Preamble

The “operating performance” safety and control area includes an overall review of the conduct of the licensed activities and the activities that enable effective performance.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CSA Group	Management System Requirements for Nuclear Facilities	N286-12

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Environmental Protection Code of Practice	Yes
Orano	Radiation Protection Code of Practice	Yes
Orano	Routine Radiological Monitoring Schedule	Yes
Orano	Facility Description Manual	Yes
Orano	Technical Information Document, Waste Rock Management	Yes

Guidance

There is no guidance provided for this licence condition.

OPERATING PERFORMANCE

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 15 of 51

Licence Condition 3.2

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

Preamble

This LC requires the licensee to implement and maintain a process for reporting information to the CNSC. This includes monitoring results, changes to facilities or approved activities, performance assessments and the occurrence of unusual events. Sections 29 and 30 of the *General Nuclear Safety and Control Regulations*, section 38 of the *Nuclear Substances and Radiation Devices Regulations* and section 16 of the *Radiation Protection Regulations* provides further insight into reportable events.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills*	REGDOC-3.1.2

* Modified reporting requirements for false alarms and Emergency Response Team (ERT) responses, where ERT activation is not directly related to the licensed activity, are described in an October 4, 2021, letter from CNSC to Orano (P. Fundarek to V. Laniece, e-Doc 6653497).

The licensee shall report effluent concentrations that reach or exceed the discharge limits in the *Metal and Diamond Mining Effluent Regulations* in addition to requirements outlined in CNSC's REGDOC-3.1.2.

The licensee shall submit to the CNSC within 90 days after the end of each quarter of a calendar year, the results of the:

- radiation monitoring program
- environmental monitoring program

Results from the above monitoring programs are also to include quality assurance and quality control information. More frequent reporting may be requested on a case-by-case basis.

The licensee shall issue worker radiation dose records within 90 days after the end of each quarter of a calendar year, to:

- the worker
- the CNSC
- the National Dose Registry (NDR)

The licensee shall submit to the CNSC an annual compliance report by March 31 of each year, covering the operation for the 12-month period from January 1 to December 31 of the previous year.

OPERATING PERFORMANCE

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

Guidance

Guidance Publications

Source	Document Title
CNSC/SK	CNSC – Saskatchewan Harmonized Annual Reporting Requirements, August 2010

Licence Condition 3.3

The licensee shall implement and maintain a program for nuclear substances and radiation devices.

Preamble

Licensees must ensure they receive CNSC authorization before the possession, use, storage, transfer, or disposal of nuclear substances and radiation devices, except as specified in the tables for this section. It is the responsibility of the licensee to ensure that they have CNSC authorization for the import or export of any nuclear substances and radiation devices.

The possession limits for unsealed nuclear substances does not apply to natural uranium and its decay products which originate in the mining or ore-treatment streams.

It is also important to note that there is no possession limit on the number of sealed nuclear sources or radiation devices.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Licence Application Guide: Nuclear Substances and Radiation Devices, Version 2 (excluding section 2)	REGDOC-1.6.1

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

OPERATING PERFORMANCE

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 17 of 51

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

The authorized make and model of radiation devices and the maximum quantity of nuclear substance per each device are:

Radiation Device Make and Model	Nuclear Substance	Maximum Quantity per Radiation Device
Ronan Engineering SA-1	Cesium-137	7,400 MBq
Texas Nuclear 5201	Cesium-137	740 MBq
Thermo Fisher Scientific Material Analyzer AM282	Cadmium-109	740 MBq
Niton Thermo Electron 700XLP	Cadmium-109	1,480 MBq
Berthold Technologies LB 7444-CR	Cobalt-60	18,500 MBq
Berthold Technologies LB 300L	Cobalt-60	18,500 MBq*

* Consists of 2 rod sources affixed together (2 sources activities are 10,091 and 8,409 MBq).

The management of nuclear substances and radiation devices will be evaluated against:

- 3.3.1 A radioisotope safety poster approved by the Commission, or a person authorized by the Commission, which corresponds to the classification of the area, room or enclosure, is posted in a readily visible location in areas, rooms or enclosures where these listed nuclear substances are handled.
- 3.3.2 When in storage, radioactive nuclear substances or radiation devices are accessible only to persons authorized by the licensee; the dose rate at any occupied location outside the storage area, room or enclosure resulting from the substances or devices in storage does not exceed 2.5 $\mu\text{Sv/h}$ and measures are in place to ensure that the dose limits in the *Radiation Protection Regulations* are not exceeded as a result of the substances or devices in storage.

Guidance

There is no guidance provided for this licence condition.

OPERATING PERFORMANCE

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 18 of 51

4. SAFETY ANALYSIS

Licence Condition 4.1

The licensee shall implement and maintain a safety analysis program.

Preamble

The “safety analysis” safety and control area includes the systematic evaluation of the potential hazards associated with the proposed activity or facility and considers the effectiveness of preventative measures and strategies in reducing the effects of such hazards.

Compliance Verification Criteria

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Environmental Performance Technical Information Document, Volume 1 of 2	Yes
Orano	Environmental Performance Technical Information Document, Volume 2 of 2 – Environmental Risk Assessment	Yes
Orano	Facility Description Manual	Yes

The safety analysis program will be evaluated against the following principles:

- 4.1.1 A process has been implemented and maintained to identify, assess, and eliminate or control health and safety and environmental risks associated with existing and new processes or changes to work procedures, equipment, organizational structure, staffing, products, services and suppliers.
- 4.1.2 Risks to health, safety and the environment have been identified, assessed, eliminated or controlled for existing and new processes or for changes to work procedures, equipment, organizational structure, staffing, products, services and suppliers.
- 4.1.3 Appropriate methodologies are used to identify potential hazards and consider the effectiveness of preventative measures and strategies in reducing the effects of such hazards.
- 4.1.4 Modelling is regularly updated using measured values to replace important assumptions and to increase the certainty of predicted long-term behaviour of contaminants.

Job hazard assessments are completed prior to conducting non-routine or complex work activities to identify and mitigate potential hazards to worker health and safety, and to the environment to an acceptable level or as low as reasonably achievable (ALARA).

SAFETY ANALYSIS

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

Guidance

Guidance Publications

Source	Document Title	CNSC e-Access Document Number
CNSC	Safety Analysis for Class 1B Nuclear Facilities*	REGDOC-2.4.4

*REGDOC not applicable to uranium mines and mills but added as guidance as there is information, such as Appendix C, which provides information on events that can be considered within a safety analysis program.

SAFETY ANALYSIS

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 20 of 51

5. PHYSICAL DESIGN

Licence Condition 5.1

The licensee shall implement and maintain a design program.

Preamble

The “physical design” safety and control area relates to activities that impact the ability of structures, systems and components to meet and maintain their design basis given new information arising over time and taking changes in the external environment into account.

The design basis is the range of conditions and events taken into account in the design of structures, systems and components of a facility according to established criteria, such that the facility can withstand them without exceeding authorized limits for the planned operation of safety systems.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Design of Uranium Mines and Mills: Ventilation Systems*	REGDOC-2.5.4
CSA Group	Management System Requirements for Nuclear Facilities	N286-12

* Applicable when applying for a CNSC licence to prepare a site for and construct, operate or decommission a uranium mine or mill.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Facility Description Manual	Yes
Orano	McClean Lake Operation – Notification of Modification to the JEB Tailings Management Facility Project to 468 mASL, November 2019	Yes

Guidance

Guidance Publications

Source	Document Title	CNSC e-Access Document Number
CNSC	General Design Considerations: Human Factors	REGDOC-2.5.1

PHYSICAL DESIGN

6. FITNESS FOR SERVICE

Licence Condition 6.1

The licensee shall implement and maintain a fitness for service program.

Preamble

The “fitness for service” safety and control area covers activities that impact the physical condition of structures, systems and components to ensure that they remain effective over time. This area includes programs that ensure equipment is available to perform its intended design function when called upon to do so.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CSA Group	Management System Requirements for Nuclear Facilities	N286-12

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Facility Description Manual	Yes

The fitness for service program will also be assessed against:

- 6.1.1 Systems, equipment, and devices are maintained in good working order such that they can perform their design function.
- 6.1.2 Instruments, controls and associated indicators are maintained operational and in calibration. Method and interval of calibrations are defined, and records of calibrations are kept.
- 6.1.3 Preventative and corrective maintenance processes and systems have been implemented and are maintained.
- 6.1.4 Regular inspection and testing of critical infrastructure and equipment are carried out.
- 6.1.5 A process has been implemented to identify, plan and schedule maintenance activities.
- 6.1.6 Maintenance, testing, surveillance and inspection backlogs are monitored and minimized.

FITNESS FOR SERVICE

- 6.1.7 Methods are used to show the current acceptance and operating status, and to prevent the use of systems, equipment or devices that are inaccurate, uncalibrated or not in working order.
- 6.1.8 When deviations beyond accuracy limits are found or suspected, their consequence on past results, and on present performance is evaluated.
- 6.1.9 A process exists to verify that changes to calibration, testing and maintenance requirements due to system and equipment modifications and replacements are implemented.

Guidance

There is no guidance provided for this licence condition.

FITNESS FOR SERVICE

7. RADIATION PROTECTION

Licence Condition 7.1

The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within 24 hours.

Preamble

The “radiation protection” safety and control area covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations*. This program must ensure that contamination and radiation doses received are monitored, controlled, kept as low as reasonably achievable (ALARA), and social and economic factors are being taken into account.

Compliance Verification Criteria

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Facility Description Manual	Yes
Orano	Routine Radiological Monitoring Schedule	Yes
Orano	Radiation Protection Code of Practice	Yes
Orano	Dosimetry Monitoring Strategy	Yes
Orano	Procedure 742 Radioactive Contamination Control	Yes
Orano	Procedure 746 ALARA	Yes
Orano	Procedure 748 Management of Radiolotopes	Yes

The radiation protection (RP) program will be assessed against the following principles:

- 7.1.1 Radiological conditions are monitored, and sources of internal and external radiation exposures are controlled. Access and work in radiological areas are controlled so that collective and individual radiation exposures are kept in accordance with the ALARA principle.
- 7.1.2 RP instrumentation and equipment are calibrated, maintained and used so that radiation levels are accurately determined. Uncalibrated equipment is removed from use.
- 7.1.3 The personal dosimetry program ensures that external and internal radiation doses to individuals are accurately determined and recorded.

RADIATION PROTECTION

7.1.4 Appropriate contamination control measures are implemented to control and minimize the contamination of areas, equipment and personnel.

7.1.5 Effective decontamination control measures are implemented to control and prevent the contamination of areas, equipment and personnel.

Action levels (AL) are designed to alert licensees before regulatory dose limits are reached. By definition, if an AL referred to in a licence is reached, a loss of control of some part of the associated RP program may have occurred and specific action is required, as defined in the *Radiation Protection Regulations*, the licence and the applicable code of practice.

Action Level	Dose (mSv)
Weekly Action Level	1
Quarterly Action Level	5

The weekly AL is assessed against official dosimetry results or engineering monitoring data. The quarterly AL is assessed against official dosimetry results. The licensee is expected to review and, if necessary, revise the ALs specified above at least once every 5 years in order to validate their effectiveness. The results of such reviews must be provided to the CNSC.

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Radiation Protection	REGDOC-2.7.1, Version 1.1
CNSC	Dosimetry, Volume 1: Ascertaining Occupational Dose	REGDOC-2.7.2
CNSC	Preparing Codes of Practice to Control Radiation Doses at Uranium Mines and Mills	G-218

RADIATION PROTECTION

8. CONVENTIONAL HEALTH AND SAFETY

Licence Condition 8.1

The licensee shall implement and maintain a conventional health and safety program.

Preamble

The “conventional health and safety” safety and control area covers the implementation of a program to manage workplace safety hazards and to protect personnel and equipment.

The regulation of non-radiological health and safety at uranium mines and mills is governed by the *Canada Labour Code Part II*, which is administered by Employment and Social Development Canada (ESDC). However, the *Saskatchewan Uranium Mines and Mills Exclusion Regulations* (SOR/2001-115) defer the regulation of occupational health and safety in Saskatchewan uranium mines and mills to the province of Saskatchewan in accordance with the requirements of *The Mines Regulations, 2018 Part II Revised Regulations of Saskatchewan*.

The CNSC also has regulatory responsibilities for the oversight of the protection of the health and safety of workers. The CNSC harmonizes the oversight of conventional health and safety with the Saskatchewan Ministry of Labour Relations and Workplace Safety.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CSA Group	Selection, use and care of respirators	Z94.4:18 (R2023)

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

The conventional health and safety program will be assessed against the following principles:

- 8.1.1 Housekeeping standards have been identified and are enforced to ensure that work areas are kept clean and organized.
- 8.1.2 Facilities, processes and procedures have been implemented to ensure the safe management of hazardous materials.
- 8.1.3 Employees and contractors actively participate in the management of conventional health and safety.
- 8.1.4 Management verifies that employees and contractors actively participate in the management of health and safety in their workplace.

CONVENTIONAL HEALTH AND SAFETY

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

- 8.1.5 A process has been established and maintained to monitor, measure and record conventional health and safety performance and the effectiveness of the occupational health and safety program on a regular basis.
- 8.1.6 Routine inspections are performed by workers, supervisors, senior staff and/or safety professionals to identify any potential safety issues.
- 8.1.7 Processes and procedures are established and maintained to investigate accidents and incidents, to identify root causes, to implement corrective actions and to verify that corrective actions have been completed and will effectively prevent recurrence.
- 8.1.8 Procedures have been implemented and maintained for reporting work-related injuries, illnesses, fatalities and conventional health and safety incidents including near misses.
- 8.1.9 The causes of injuries are investigated, corrective actions implemented, and the effectiveness of corrective actions verified.
- 8.1.10 A preventative and corrective action procedure has been established and maintained to address non-conformances and inadequately controlled risks.

Guidance

Guidance Publications

Source	Document Title	CNSC e-Access Document Number
CNSC	Conventional Health & Safety	REGDOC-2.8.1

CONVENTIONAL HEALTH AND SAFETY

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 27 of 51

9. ENVIRONMENTAL PROTECTION

Licence Condition 9.1

The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within 24 hours.

Preamble

The “environmental protection” safety and control area covers programs that identify, control and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities or as the result of licensed activities.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Environmental Protection: Environmental Principles, Assessments and Protection Measures, Version 1.2	REGDOC-2.9.1
CNSC	Controlling Releases to the Environment	REGDOC-2.9.2*
CSA Group	Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills	N288.4:19
CSA Group	Effluent and Emissions Monitoring Programs at Nuclear Facilities	N288.5:22
CSA Group	Environmental Risk Assessments at Nuclear Facilities and Uranium Mines and Mills	N288.6:22
CSA Group	Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills	N288.7:15
CSA Group	Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities	N288.8:17
CSA Group	Environmental Management of Nuclear Facilities: Common requirements of the CSA N288 series of Standards, 2022	N288.0:22

*Orano confirmed to be compliant with REGDOC-2.9.2 by October 1, 2026.

ENVIRONMENTAL PROTECTION

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

Licence Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Environmental Monitoring Program	Yes
Orano	Environmental Protection Code of Practice	Yes
Orano	Technical Information Document, Environmental Performance, Volume 1 of 2	Yes
Orano	Technical Information Document Environmental Performance, Volume 2 of 2 – Environmental Risk Assessment	Yes
Orano	Technical Information Document, Tailings Management	Yes
Orano	Technical Information Document, Waste Rock Management	Yes

To ensure the applicable environmental protection measures have been established, implemented and maintained, the environmental protection program will also be assessed against:

- 9.1.1 Action levels specified in the environmental protection code of practice. When the licensee becomes aware that an action level has been triggered, the licensee shall notify the Commission within 24 hours and take specific action as defined in the *Uranium Mines and Mills Regulations* and the environmental code of practice.
- 9.1.2 The authorized release limits as specified in LC 9.2. When the licensee becomes aware that an authorized release limit has been reached or exceeded, the licensee shall immediately notify the Commission, investigate, and take corrective action to ensure that the releases are maintained below the authorized release limits.

Guidance

Guidance Publications

Source	Document Title	CNSC e-Access Document Number
CSA Group	Environmental Management Systems – Requirements with Guidance for Use	ISO 14001:2015

ENVIRONMENTAL PROTECTION

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 29 of 51

Licence Condition 9.2

The licensee shall, where the effluent concentration reaches or exceeds the discharge limits specified in the *Metal and Diamond Mining Effluent Regulations*^[3], as amended from time to time, immediately investigate and take corrective action to ensure that the effluent concentration is maintained below the discharge limits.

Preamble

The *Metal and Diamond Mining Effluent Regulations* (MDMER) applies to all Canadian metal mines that exceed an effluent flow rate of 50 cubic metres per day and deposit effluent into fisheries waters at any time after the regulations were registered. The MDMER prescribes limits for arsenic, copper, cyanide, lead, nickel, zinc, un-ionized ammonia, total suspended solids (TSS), radium-226, and pH in mine effluent. The MDMER also includes a requirement that effluent be non-acutely lethal to rainbow trout or *Daphnia magna*.

Compliance Verification Criteria

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Environmental Protection Code of Practice	Yes

^[3] *Metal and Diamond Mining Effluent Regulations* (SOR/2002-222).

ENVIRONMENTAL PROTECTION

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

The authorized liquid effluent release limits are:

Deleterious Substance	Maximum Authorized Monthly Mean Concentration	Maximum Authorized Concentration in a Composite Sample	Maximum Authorized Concentration in a Grab Sample
Arsenic (mg/L)	0.30	0.45	0.60
Copper (mg/L)	0.30	0.45	0.60
Lead (mg/L)	0.10	0.15	0.20
Nickel (mg/L)	0.50	0.75	1.00
Zinc (mg/L)	0.50	0.75	1.00
Un-ionized ammonia (mg/L)	0.50	N/A	1.00
Total Suspended Solids (mg/L)	15.00	22.50	30.00
Radium-226 (Bq/L)	0.37	0.74	1.11

Acid balance (as H_2O^+) reported as pH	In a range of 6.0 to 9.5
--	--------------------------

Acutely Lethal Effluent	0%
-------------------------	----

Notes:

- 1) Authorized release limits have been harmonized, where available, with those required under the MDMER as amended from time to time.
- 2) Definition of Units: mg/L = milligrams per litre
 Bq/L = becquerels per litre
- 3) All concentrations and activities are total values.
- 4) The above limits shall apply to all effluent discharged to Sink Reservoir from:
 - i) the monitoring ponds at the JEB water treatment plant
 - ii) the sand filter discharge tank at the Sue water treatment plant.
- 5) "Monthly mean concentration" means the average value of the concentrations measured in all composite or grab samples collected from the final discharge point during each month when liquid effluent is released.
- 6) "Composite sample" means:
 - (a) a quantity of effluent consisting of not less than three equal volumes or three volumes proportionate to flow that have been collected at approximately equal time intervals over a period of not less than seven hours and not more than 24 hours; or
 - (b) a quantity of effluent collected continuously at a constant rate or at a rate proportionate to the rate of flow of the effluent over a sampling period of not less than seven hours and not more than 24 hours.

ENVIRONMENTAL PROTECTION

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 31 of 51

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

- 7) "Grab sample" means a quantity of undiluted effluent collected at any given time.
- 8) "*Acutely lethal*" (Source MDMER), in respect of an effluent, means that the effluent at 100 percent concentration kills
 - (a) more than 50% of the rainbow trout subjected to it for a period of 96 hours, when tested in accordance with the acute lethality test set out in section 14.1;
 - (b) more than 50% of the *Daphnia magna* subjected to it for a period of 48 hours, when tested in accordance with the acute lethality test set out in section 14.3.

Guidance

Guidance Publications

Source	Document Title	Document Number
CSA Group	Environmental Management Systems – Requirements with Guidance for Use	ISO 14001:2015

ENVIRONMENTAL PROTECTION

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 32 of 51

10. EMERGENCY MANAGEMENT AND FIRE PROTECTION

Licence Condition 10.1

The licensee shall implement and maintain an emergency preparedness program.

Preamble

The “emergency management and fire protection” safety and control area covers emergency plans and emergency preparedness programs which exist for emergencies and for non-routine conditions. It also includes any results of exercise participation.

Licensees are required to continually maintain and enhance their emergency management programs.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Nuclear Emergency Preparedness and Response, Version 2*	REGDOC-2.10.1

**Off-site reporting timelines to the CNSC is “Immediately” in case of events as described in Orano’s document 113-00-04 Safety Events Regulatory Reporting Version 02, December 31, 2023.*

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Emergency Response Procedure	Yes

Guidance

There is no guidance provided for this licence condition.

Licence Condition 10.2

The licensee shall implement and maintain a fire protection program.

EMERGENCY MANAGEMENT AND FIRE PROTECTION

Preamble

Licencees are required to implement and maintain a fire protection program (a set of planned, coordinated, controlled and documented activities) to ensure that the licensed activities do not result in an unreasonable risk to the health and safety of persons and to the environment due to fire and to ensure that the licensee is able to efficiently and effectively respond to emergency fire situations.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
NRC	National Building Code of Canada (2020)*	N/A
NRC	National Fire Code of Canada (2020)*	N/A
CSA Group	Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances	N393:22*

*The National Building Code (NBC) and National Fire Code (NFC) are adopted by the province of Saskatchewan as the minimum standard for construction and renovation of buildings throughout the province. As of January 1, 2024, the 2020 versions of the NBC and NFC are adopted for use throughout Saskatchewan, subject to exclusions and/or amendments as contained in The Building Code Regulations and The Fire Safety Regulations. Orano is required to comply with the most recent versions of the NBC and NFC as adopted by the province of Saskatchewan.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Fire Protection Program	Yes

Guidance

There is no guidance provided for this licence condition.

EMERGENCY MANAGEMENT AND FIRE PROTECTION

11. WASTE MANAGEMENT

Licence Condition 11.1

The licensee shall implement and maintain a waste management program.

Preamble

The “waste management” safety and control area covers internal waste-related programs that form part of the facility’s operations up to the point where the waste is removed from the facility to a separate waste management facility.

CNSC’s REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada* defines radioactive waste as any material (liquid, gaseous or solid) that contains a radioactive “nuclear substance,” as defined in section 2 of the *Nuclear Safety and Control Act*, and which the owner has declared to be waste. In addition to containing nuclear substances, radioactive waste may also contain non-radioactive “hazardous substances,” as defined in section 1 of the *General Nuclear Safety and Control Regulations*.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Waste Management, Volume 1: Management of Radioactive Waste	REGDOC-2.11.1
CNSC	Waste Management, Volume II: Management of Uranium Mine Waste Rock and Mill Tailings*	REGDOC-2.11.1

*Applicable to new uranium mine or mill projects and/or to new waste management facilities at existing uranium mines and mills.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Facility Description Manual	Yes

WASTE MANAGEMENT

The waste management program will be assessed against the following principles:

- 11.1.1 A radioactive waste management program is implemented to control and minimize the volume of radioactive waste.
- 11.1.2 The volume of waste is minimized by applying the waste hierarchy.
- 11.1.3 Work is carried out in a manner that minimizes waste and prevents pollution.
- 11.1.4 Waste is stored or disposed of in the appropriate manner.
- 11.1.5 Wastes are managed in a manner that does not compromise reclamation or decommissioning plans.
- 11.1.6 The effectiveness of waste management practices is monitored, measured and recorded on a regular basis.
- 11.1.7 Routine inspections are performed to identify any potential waste management issues and to verify the condition of containment structures and waste management facilities.
- 11.1.8 The safety of embankments/dams is inspected, evaluated and reviewed.
- 11.1.9 Records are kept of the quantities and types of waste generated and the method of disposal or management.
- 11.1.10 Wastes are managed to control the present and future releases of contaminants to the environment.
- 11.1.11 Surface water is managed to prevent or minimize the volume that is contaminated.

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Waste Management, Volume III: Safety Case for the Disposal of Radioactive Waste, Version 2	REGDOC-2.11.1
Canadian Dam Association	Canadian Dam Association, Dam Safety Guidelines 2007 (revised 2013)	N/A
Canadian Dam Association	CDA Technical Bulletin: Dam Safety Reviews (2016)	N/A

WASTE MANAGEMENT

Licence Condition 11.2

The licensee shall implement and maintain a decommissioning strategy.

Preamble

This LC requires that the licensee maintain a preliminary decommissioning plan (PDP).

A PDP provides an overview of the proposed decommissioning approach that is sufficiently detailed to assure that the proposed approach is, in the light of existing knowledge, technically and financially feasible, and appropriate in the interests of health, safety, security and the protection of the environment. The PDP defines areas to be decommissioned and the general structure and sequence of the principal work packages. The PDP forms the basis for establishing and maintaining a financial arrangement (financial guarantee) that will assure adequate funding of the decommissioning plan.

Compliance Verification Criteria***Licensing Basis Publications***

Source	Document Title	Document Number
CSA Group	Decommissioning of Facilities Containing Nuclear Substances	N294-19
CNSC	Decommissioning	REGDOC-2.11.2
CNSC	Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities	REGDOC-3.3.1

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes
Orano	Facility Description Manual	Yes
Orano	Preliminary Decommissioning Plan and Financial Assurance	Yes

The PDP is to be revised at a minimum every 5 years or when required by the Commission; however, is to be kept current to reflect any changes in the site or nuclear facility. Orano's next submission of the McClean Lake PDP is due in 2030.

Guidance

There is no guidance provided for this licence condition.

WASTE MANAGEMENT

12. SECURITY

Licence Condition 12.1

The licensee shall implement and maintain a security program.

Preamble

The “security” safety and control area covers the programs required to implement and support the security requirements stipulated in the regulations, the licence, orders, or expectations for the facility or activity.

Compliance Verification Criteria

Licence Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

The security program will be assessed against the following principles:

- 12.1.1 The security program addresses the risks identified in an industrial security threat and risk assessment.
- 12.1.2 Reasonable measures are implemented and maintained to prevent the loss of nuclear substances or prevent acts of sabotage at the facility.
- 12.1.3 Reasonable measures are taken to prevent unauthorized access to the site and to areas within the facility where nuclear substances are stored.
- 12.1.4 Reasonable measures are implemented to prevent unauthorized loss, alteration, or disclosure of prescribed information.
- 12.1.5 The industrial security threat and risk assessment is periodically reviewed and updated.
- 12.1.6 Security awareness training is implemented and maintained.

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material, Version 2.1	REGDOC-2.12.3

SECURITY

13. SAFEGUARDS AND NON-PROLIFERATION

Licence Condition 13.1

The licensee shall implement and maintain a safeguards program.

Preamble

The “safeguards and non-proliferation” safety and control area covers the programs and activities required for the successful implementation of the obligations arising from the Canada/International Atomic Energy Agency (IAEA) safeguards agreements, as well as all other measures arising from the *Treaty on the Non-Proliferation of Nuclear Weapons*.

Compliance Verification Criteria

Source	Document Title	Document Number
CNSC	Safeguards and Nuclear Material Accountancy	REGDOC-2.13.1

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

The safeguards and non-proliferation program will be assessed against CNSC’s REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*, and the following principles:

- 13.1.1 Reasonable services and assistance are provided to the IAEA to enable the IAEA to carry out its duties and functions.
- 13.1.2 Prompt access to all locations at the facility is granted to the IAEA at all reasonable times where such access is required for the purposes of carrying on an activity pursuant to a safeguards agreement. Health and safety services and escorts are provided as required in order to facilitate activities.
- 13.1.3 Records that must be kept or any reports that are required to be made under a safeguards agreement are disclosed to the CNSC and the IAEA.
- 13.1.4 Reasonable assistance is provided to the IAEA to enable sampling and removal or shipment of samples.
- 13.1.5 Reasonable assistance is provided to the IAEA to enable measurements, tests and removal or shipment of equipment.
- 13.1.6 Measures are implemented to prevent damage to, or the theft, loss or sabotage of samples collected pursuant to a safeguards agreement or the illegal use, possession or removal of such samples.

SAFEGUARDS AND NON-PROLIFERATION

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

- 13.1.7 Reports and information, that is required to facilitate Canada's compliance with any applicable safeguards agreement, is provided to the Commission.

Guidance

There is no guidance provided for this licence condition.

SAFEGUARDS AND NON-PROLIFERATION

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 40 of 51

14. PACKAGING AND TRANSPORT

Licence Condition 14.1

The licensee shall implement and maintain a packaging and transport program.

Preamble

The [*Transportation of Dangerous Goods Regulations*](#) (TDGR) and the [*Packaging and Transport of Nuclear Substances Regulations, 2015*](#) (PTNSR 2015) apply to the packaging and transport of nuclear substances in Canada. Both regulations provide specific requirements for the design of transport packages, the packaging, marking and labeling of packages and the handling and transport of nuclear substances.

Compliance Verification Criteria

Licence Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Orano	Integrated Management System	Yes

The licensee shall implement and maintain a packaging and transport program that will ensure their compliance with all the requirements set out in the TDGR and PTNSR 2015 for all transport activities involving regulated nuclear substances.

Guidance

There is no guidance provided for this licence condition.

PACKAGING AND TRANSPORT

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

15. FACILITY SPECIFIC

There are no facility-specific licence conditions.

FACILITY SPECIFIC

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 42 of 51

APPENDIX A CHANGE CONTROL PROCESS

A.1 Change Control Process

A change control process is applied to the LCH to ensure that:

- preparation and use of the LCH are properly controlled
- all referenced documents are correctly identified and maintained
- procedures for modifying the LCH are followed.

A request to change this LCH can be initiated by either CNSC staff or the licensee. The licensee will be consulted on any changes to the LCH that are proposed by CNSC staff.

CNSC staff will take the following steps to update the LCH:

1. the CNSC receives or initiates written notification of proposed change
2. initiate a change request using the Change Request Form
3. complete a technical review of the proposed change, if required
4. consult the licensee and in case of disagreement on the proposed change, the dispute resolution process outlined in section A.3 will apply
5. obtain consent and signature from a Delegated Officer
6. update the LCH in accordance with the Change Request Form and send the updated document to the parties identified on the distribution list (section A.5).

APPENDIX A

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

Change Request Form

1. GENERAL INFORMATION			
File Plan #		e-Doc #(s) for Change Request Form	
Licencee	Licence Number	LCH #, Rev/Version	Request Date
Licensing Officer			
2. CHANGE(S) TO THE LCH			
#	Description and Purpose	Proposed Change	References
1	<initiator, nature, reason for change, e.g. administrative, change to a licensee doc, etc.>	<identify modifications, such as by track changes, highlighting, etc.>	<LC, page, section #, etc.>
2			
3. ASSESSMENT (text and/or e-Doc #s)			
#	Division/Org	Comment	Disposition
1	<division>		
	<division>		
	<licensee>		
	<division>		
2	etc.		
4. CONSENT TO MODIFY			
#	Agreed	Comment	
1			
2			
Name	Title	Signature	Date
5. LCH DOCUMENTATION AND DISTRIBUTION			
New LCH Number	LCH Effective Date	e-Doc # (include version number)	
CNSC Outgoing Notification		e-Doc #	Date Sent

APPENDIX A

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 44 of 51

A.2 Review Criteria for Proposed Changes to Licensing Basis Documents

The licensee must provide the CNSC with written notification of a proposed significant change to key licensee documents before the licensee implements the change. The notification must be accompanied by sufficient information to demonstrate that the change is within the intent of the licensing basis. Written notification of minor or administrative changes may be made in batches after the changes have been implemented.

The following criteria will be used by CNSC staff to determine if the proposed change is acceptable:

1. The submission includes the appropriate level and quality of information with regards to:
 - a) The description of the proposed change including:
 - a summary of the change, including the purpose or need for the change
 - a preliminary finding of whether this proposal or notification is required under the NSCA, a regulation made under the Act or the licence, or has implications under the *Impact Assessment Act*, or whether a licence amendment or other licensing action would likely be required
 - where applicable, the alternatives evaluated and the reasons for selection of the chosen option
 - any changes to the inventories of nuclear substances on site related to the proposed change
 - the construction, commissioning and operating schedule for the proposed change including hold points or progress reports for regulatory review and approval (as appropriate)
 - expected impacts, if any, on the proposed decommissioning or closure plans
 - results of any risk analysis or hazard operability studies performed, and a summary of the identified hazards and the mitigation measures identified to control potential hazards
 - b) The description of the design control, operating specifications and criteria including:
 - the design basis and criteria, and performance specifications
 - the design drawings such as the general arrangement, process and instrumentation diagrams, and process flow sheets
 - the quality management program for the various key stages of the change (e.g., design, construction, commissioning, etc.)

APPENDIX A

- c) The assessment of both the short- and long-term impacts with the mitigation measures in place on:
 - worker's health and safety, including potential radiological and non-radiological exposures
 - the environment
 - security
 - Canada's international obligations
 - d) The planned administrative controls including:
 - changes to the organization, roles and responsibilities
 - changes to applicable programs and procedures
 - a description of the proposed monitoring, inspection and test plans, including locations and frequency proposed to evaluate both positive and negative results
 - e) Changes to contingency plans including "full-stop measures"
 - f) Evidence that the licensee's internal reviews and approvals have been completed, including meeting the requirements of the licensee's change management procedure and consultation with the onsite occupational health and environmental committees, where applicable
 - g) Identification of the documents and training programs that may require revision when the proposed change is implemented.
2. The effects of the proposed change or action remain within the licensing basis.
 3. Following the implementation of the change, the licensee will remain in compliance with the requirements set out in the applicable acts, regulations, and LCs.

A.3 Dispute Resolution

In case of a dispute between the licensee and CNSC staff regarding changes to the LCH, both parties will meet to discuss the dispute and reach a decision on the path forward. The decision, including its rationale will be documented. If any party is not satisfied with the decision, the resolution process will proceed up to the Director, Director General or Executive Vice-President and Chief Regulatory Operations Officer level. If any party is still not satisfied with the decision, the issue will be brought to the attention of the Commission at a Commission meeting. The decision made by the Commission will be final.

A.4 Records Management

In order to track changes to the LCH, the document change request and accompanying documentation will be archived in records and referenced in the revision history of the LCH. Electronic communication related to the change, such as comments from reviewers will be stored in the CNSC information management system.

APPENDIX A

A.5 Distribution

A copy of the updated version of the LCH will be distributed to the following parties:

- Uranium Mines and Mills Division, CNSC
- Orano Canada Inc.

A.6 Reporting to the Commission

CNSC staff will report on the changes made to the LCH during the previous year in their annual report to the Commission.

APPENDIX A

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

APPENDIX B LICENSEE DOCUMENTS THAT REQUIRE NOTIFICATION OF CHANGE

Document Title
Facility Description Manual
Integrated Management System
Environmental Monitoring Program - Locations, Frequencies and Parameters
Environmental Protection Code of Practice
Radiation Protection Code of Practice
Dosimetry Monitoring Strategy
Routine Radiological Monitoring Schedule
Public Information Program
Preliminary Decommissioning Plan and Financial Assurance
Orano Financial Instruments: - Bond Number M220213 for CAD \$78,971,896.28 and Irrevocable Letter of Guarantee No. 990004 for CAD \$166,664.78
Denison Financial Instruments: - Letter of Credit S18572/240359 for CAD \$22,972,050.00 - Letter of Credit S18572/240346 for CAD \$48,127.00

APPENDIX B

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 48 of 51

McClean Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

APPENDIX C LIST OF DOCUMENTS USED AS GUIDANCE OR COMPLIANCE VERIFICATION CRITERIA

Document	Document Title	Document Number
Canadian Dam Association	Canadian Dam Association, Dam Safety Guidelines 2007 (revised 2013)	N/A
Canadian Dam Association	CDA Technical Bulletin: Dam Safety Reviews (2016)	N/A
CNSC	Preparing Codes of Practice to Control Radiation Doses at Uranium Mines and Mills	G-218
CNSC	Management System	REGDOC-2.1.1
CNSC	Human Performance, Version 2	REGDOC-2.2.1
CNSC	Radiation Protection	REGDOC-2.7.1
CNSC	Dosimetry, Volume 1: Ascertaining Occupational Dose	REGDOC-2.7.2
CNSC	General Design Considerations: Human Factors	REGDOC-2.5.1
CNSC	Environmental Protection: Environmental Principles, Assessments and Protection Measures, Version 1.2	REGDOC-2.9.1
CNSC	Personnel Training, Version 2	REGDOC-2.2.2
CNSC	Conventional Health & Safety	REGDOC-2.8.1
CNSC	Nuclear Emergency Preparedness and Response, Version 2	REGDOC-2.10.1
CNSC	Safeguards and Nuclear Material Accountancy	REGDOC-2.13.1
CNSC	Public Information and Disclosure	REGDOC-3.2.1
CNSC	Licence Application Guide Nuclear Substances and Radiation Devices	REGDOC-1.6.1
CNSC	Safety Culture	REGDOC-2.1.2
CNSC	Safety Analysis for Class 1B Nuclear Facilities	REGDOC-2.4.4
CNSC	Design of Uranium Mines and Mills: Ventilation Systems	REGDOC-2.5.4
CNSC	Waste Management, Volume II: Management of Uranium Mine Waste Rock and Mill Tailings	REGDOC-2.11.1
CNSC	Decommissioning	REGDOC-2.11.2*
CNSC	Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material, Version 2.1	REGDOC-2.12.3

APPENDIX C

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 49 of 51

McClellan Lake Operation
Licence Conditions Handbook

Effective Date: --, 2026
LCH-MINEMILL-McCLEAN.00/2029

Document	Document Title	Document Number
CNSC	Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills	REGDOC-3.1.2
CNSC	Indigenous Engagements	REGDOC-3.2.2
CNSC	Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities	REGDOC-3.3.1
CNSC	Regulatory Fundamentals	REGDOC-3.5.3
CNSC/SK	CNSC – Saskatchewan Harmonized Annual Reporting Requirements, August 2010	e-Doc 3678482
CSA Group	Management System Requirements for Nuclear Facilities	N286-12
CSA Group	Environmental Management of Nuclear Facilities: Common Requirements of the CSA N288 series of Standards, 2022	N288.0:22
CSA Group	Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills	N288.4:19
CSA Group	Effluent and Emissions Monitoring Programs at Nuclear Facilities	N288.5:22
CSA Group	Environmental Risk Assessments at Nuclear Facilities and Uranium Mines and Mills	N288.6:22
CSA Group	Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills	N288.7:15
CSA Group	Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities	N288.8:17
CSA Group	Decommissioning of Facilities Containing Nuclear Substances	N294-19
CSA Group	Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances	N393-22
CSA Group	Selection, use and care of respirators	Z94.4-11
CSA Group	Environmental Management Systems – Requirements with Guidance for Use	ISO 14001:2015
National Research Council	National Building Code of Canada (2020)	N/A
National Research Council	National Fire Code of Canada (2020)	N/A

Note: For CNSC documents, the most recent version of a referenced document shall be implemented following review and agreement between Orano and the Canadian Nuclear Safety Commission.

APPENDIX C

e-Doc 7263790 (Word)
e-Doc 7272206 (PDF)

Page 50 of 51