Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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CMD: 25-H104

Date signed/Signé le : 26 MARCH 2025

A Licence Amendment

Cameco Corporation McArthur River Operation – Financial Guarantee Review Cigar Lake Operation – Financial Guarantee Review and Licence Amendment

Hearing in writing based solely on written submissions

Scheduled for:
04 April 2025

Submitted by:
CNSC Staff

Modification d'un permis

Cameco Corporation Établissement de McArthur River – Examen de la garantie financière Établissement de Cigar Lake – Examen de la garantie financière et modification de permis

Audience par écrit fondée uniquement sur des mémoires

Prévue le :
4 Avril 2025

Soumis par :
Le personnel de la CCSN

e-Doc 7420971 Word
e-Doc 7445413 PDF

Summary.

This CMD presents information about the following matters of regulatory interest with respect to Cameco Corporation's Cigar Lake and McArthur River operations:

- The revised financial guarantees for the Cigar Lake and McArthur River operations.
- An amendment to the surface lease at the Cigar Lake Operation.

CNSC staff recommend the Commission consider taking the following actions:

- Accept the proposed revised amounts of the financial guarantees for the Cigar Lake and McArthur River operations
- Amend the Cigar Lake licence to update the drawing in Appendix A of the licence to reflect changes in the provincial surface lease boundary.
- Direct Cameco Corporation to submit to the Commission, within 90 days of the publication of a decision, revised financial instruments.

The following items are attached:

- Current licence (Cigar): UML-MINE-CIGAR.00/2031
- Current licence (McArthur): UML-MINE-MCARTHUR.00/2043
- Proposed licence UML-MINE-CIGAR.01/2031
- Draft licence conditions handbook (Cigar)
- Draft licence conditions handbook (McArthur)

Résumé

Le présent CMD fournit de l'information sur les questions d'ordre réglementaire suivantes concernant les établissements de Cameco Corporation à Cigar Lake et McArthur River:

- Les garanties financières révisées pour les établissements de Cigar Lake et de McArthur River.
- Une modification au bail de surface de l'établissement de Cigar Lake.

Le personnel de la CCSN recommande a la Commission envisager les mesures suivante

- Accepter les montant révisés proposés aux garanties financières pour les établissements de Cigar Lake et de McArthur River.
- Modifier le permis de Cigar Lake pour mettre à jour le dessin de l'annexe A afin de refléter les changements dans les limites du bail de surface provincial.
- Donner instruction à Cameco Corporation de soumettre les instruments financiers révises à la Commission, dans les 90 jours suivant la publication d'une décision.

Les pièces suivantes sont jointes :

- Permis actuel (Cigar) : UML-MINE-CIGAR.00/2031
- Permis actuel (McArthur) : UML-MINE-MCARTHUR.00/2043
- Permis proposé UML-MINE-CIGAR.01/2031
- Ébauche du manuel des conditions de permis (Cigar)
- Ébauche du manuel des conditions de permis (McArthur)

Signed/Signé le

26 March 2025 / 26 Mars 25

McAllister, Andrew

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Plain Language Summary

Canadian Nuclear Safety Commission (CNSC) staff wish to acknowledge that the Cigar Lake and McArthur River sites are located in northern Saskatchewan, on Treaty 10 territory (1906), and the Homeland of the Métis, and are within the traditional territories of the Denesųłiné, Cree, and Métis.

As part of the routine 5-year review cycle, Cameco submitted updated preliminary decommissioning plans (PDPs) and preliminary decommissioning cost estimates (PDCEs) for the Cigar Lake and McArthur River operations. These documents serve to update the current PDPs and PDCEs, which were submitted in 2018 and finalized in 2019 as required under the 5-year review cycle. To reduce duplication of effort, CNSC staff prepared this Commission member document (CMD) for the Commission's consideration of the proposed financial guarantee amounts for both the Cigar Lake and the McArthur River operations.

In addition, the provincial surface lease agreement boundary was amended on April 1, 2023. As a result of that change, Cameco requested an amendment to the drawing in Appendix A of the licence to show the updated lease boundary. No other licence changes are proposed.

CNSC staff completed a technical review of the revised PDPs and PDCEs for both operations. An increase in the financial guarantee amount is proposed for each site. All technical comments have been addressed, and the plans and cost estimates comply with regulatory requirements. Furthermore, the Saskatchewan Ministry of Environment has accepted the revised PDPs and PDCEs for both operations.

Should the Commission accept the proposal, the licence conditions handbook for each site will be updated to account for the new PDPs, PDCEs and financial guarantee instruments.

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

CMD STRUCTURE

This Commission Member Document (CMD) is presented in 2 parts.

Part 1 of this CMD includes:

1. an overview of the matter being presented;
2. overall conclusions and overall recommendations;
3. general discussion pertaining to the safety and control areas (SCAs) that are relevant to this submission;
4. discussion about other matters of regulatory interest; and
5. appendices material that complements items 1 through 4.

Part 2 of this CMD provides all available information pertaining directly to the current and proposed licence if applicable.

1. Overview

1.1 Background

Cameco Corporation is the licence holder and operator of the Cigar Lake Operation, which is located approximately 660 kilometers north of Saskatoon, Saskatchewan, as well as the McArthur River Operation, which is located approximately 620 kilometers north of Saskatoon, Saskatchewan.

The Cigar Lake Operation consists of an underground uranium mine with surface facilities for loading ore slurry into trucks, waste management facilities, a water treatment plant (WTP), surface freeze plants, administration offices and warehouses. Ore from Cigar Lake is transported by truck about 70 kilometers to Orano Canada Inc.'s McClean Lake Operation for processing into triuranium oxtoxide ($U_3O_{8)}$, commonly referred to as "yellowcake".

The McArthur River Operation consists of an underground uranium mine, primary ore processing, ore slurry loading, waste management facilities, a water treatment plant, effluent storage ponds, surface freeze plants, administration offices and warehouses. Ore from McArthur River is transported about 60 kilometers to Cameco's Key Lake mill for processing into triuranium oxtoxide ($U_3O_{8)}$, commonly referred to as "yellowcake".

Figure 1: Location map

According to the 5-year review cycle on PDPs for Cigar Lake and McArthur River respectively, on June 23, 2022, and December 21, 2022, Cameco submitted an updated draft PDP and PDCE for review by the Saskatchewan Ministry of Environment (SMOE) and CNSC staff. After addressing technical review comments from both agencies, revised final PDPs and PDCEs were submitted by Cameco on January 10, 2025, for both sites.

The PDPs [1,2] outline the end state of the operation, as summarized in section 1.2 of this CMD, and the steps the licensee will take to reach that end state. The PDCEs [3,4] outline the basis for the value of the financial guarantee and is based on the project end state as described in the PDP. CNSC specialists reviewed and assessed the PDPs and PDCEs against Canadian Standards Association (CSA) Group standard N294.0 [5] and CNSC regulatory documents [6, 7] and confirmed that the submissions meet regulatory requirements.

Under *The Mineral Industry Environmental Protection Regulations, 1996*, SMOE requires that mining and milling operations prepare decommissioning plans and financial assurances (equivalent to the term financial guarantee under the *Nuclear Safety Control Act* (NSCA). SMOE completed their review of the PDPs and PDCEs for the Cigar Lake and McArthur River operations and have accepted the reports and the proposed financial guarantee amounts.

A memorandum of understanding (MoU) between the CNSC and the province of Saskatchewan on reclamation and financial guarantees guides cooperation between the parties [8]. The MoU stipulates that it is not intended to require owners and/or operators of uranium mining and milling facilities in Saskatchewan to provide separate and distinct financial guarantees to satisfy each of federal and provincial requirements. The CNSC and SMOE work closely in aligning and coordinating decommissioning and financial guarantee requirements. SMOE is the owner of the lands, the beneficiary of the financial guarantee for all operating and decommissioned uranium mines and mills in Saskatchewan and provides conditional acceptance of the financial guarantee until approved by the Commission. The SMOE can invoke the Commission-approved financial guarantee to ensure decommissioning is carried out under extenuating circumstances such as bankruptcy or a failure of the licensee to meet regulatory requirements.

1.2 Highlights

The following is a summary of the financial guarantee regulatory review:

Cigar Lake:

- Cameco submitted an updated draft PDP and PDCE in June 2022 for review by CNSC and SMOE staff.
- Cameco revised the PDP and PDCE in response to CNSC and SMOE staff regulatory review comments and submitted a revised draft PDP and PDCE in 2024.
- Cameco proposed an amount of C$76.5 million for decommissioning the Cigar Lake Operation.
- SMOE accepted the revised draft PDP and PDCE on July 16, 2024 [9]. Cameco submitted the final PDP and PDCE in January 2025.
- Based on CNSC staffs' technical assessment of the information submitted by Cameco, CNSC staff prepared a proposed amended licence, updated LCH and this CMD, including CNSC staff's conclusions and recommendations, for the Commission's consideration.

In addition to the financial guarantee review, this CMD includes a proposed amendment to the Cigar Lake Operating Licence (UML-MINE-CIGAR.00/2031) to reflect changes to the provincial surface lease boundary shown on the drawing included in Appendix A of the licence. This will not result in any changes to the authorized activities at the Cigar Lake Operation.

McArthur River:

- Cameco submitted an updated draft PDP and PDCE in December 2022 for review by CNSC and SMOE staff.
- Cameco revised the PDP and PDCE in response to CNSC and SMOE staff regulatory review comments and submitted a revised draft PDP and PDCE in 2024.
- Cameco proposed an amount of C$51.4 million for decommissioning the McArthur River Operation.
- SMOE accepted the revised draft PDP and PDCE on March 6, 2024 [10]. Cameco submitted the final PDP and PDCE in January 2025.
- Based on CNSC staffs' technical assessment of the information submitted by Cameco, CNSC staff prepared an updated LCH and this CMD, including CNSC staff's conclusions and recommendations, for the Commission's consideration.

1.3 Overall Conclusions

- CNSC staff concluded the revised PDPs [1, 2] and PDCEs [3, 4] for the Cigar Lake and McArthur River operations meets the criteria of CSA Group standard N294:19 [5], CNSC Regulatory Document REGDOC-2.11.2 [6], CNSC Regulatory Document REGDOC-3.3.1 [7].
- CNSC staff concluded that the proposed update to the drawing within Appendix A of the Cigar Lake Operating Licence, to reflect the updated surface lease boundary for the operation, is appropriate and has no impact on licensed activities.
- with respect to paragraphs 24(4)(a) and (b) of the *Nuclear Safety and Control Act*, CNSC staff have concluded that the licensee:
  - is qualified to carry on the activities authorized by the licence; and
  - will, in carrying out that activity, 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.

1.4 Overall Recommendations

CNSC staff recommend the following to the Commission:

1. accept the proposed revised amount of the financial guarantee for the Cigar Lake and McArthur River operations;
2. direct Cameco Corporation to submit to the Commission, within 90 days of the publication of a decision, revised financial instruments; and
3. issue the proposed Uranium Mine Licence (UML-MINE-CIGAR.01/2031) which has an updated site map in Appendix A.

2. Indigenous and Public Consultation and Engagement

2.1 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 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 an interest 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 to participate in environmental monitoring. The CNSC also provides funding support (through the CNSC's Funding Programs) for Indigenous peoples to meaningfully participate in Commission proceedings and ongoing regulatory activities.

2.1.1 Discussion

The licence amendment application does not change the operations, site characteristics or propose any new activities at the Cigar Lake site. CNSC staff concluded that approval of Cameco's application will not lead to any new impacts to Indigenous or Treaty rights.

CNSC staff regularly engage with Indigenous Nations regarding their rights and interests in relation to the Cigar Lake and McArthur River sites and have established Terms of Reference for Long Term Engagement with the Ya Thi Néné Land and Resource Office and English River First Nation, and also have regular engagement and communications with the Metis Nation-Saskatchewan and Kineepik Métis Local. CNSC staff have ensured that these Nations are aware of Cameco's licence amendment application and that CNSC staff are available to answer any questions about the application and process.

2.1.2 Conclusion

As the licence amendment application will not lead to any new impacts on Indigenous or Treaty rights, CNSC staff concluded that the Duty to Consult is not raised for this matter. However, CNSC staff regularly engage and communicate with Indigenous Nations regarding their rights and interests in relation to the Cigar Lake and McArthur River sites and have ensured that they were made aware of Cameco's licence application.

2.2 CNSC 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.

2.2.1 Discussion

CNSC staff met with the Northern Saskatchewan Environmental Quality Committee (NSEQC) on June 5, 2024, as well as December 5, 2024, and gave a presentation that included information on the proposed updates to financial guarantees. There were no concerns or recommendations raised during these sessions with respect to this matter.

2.2.2 Conclusion

CNSC staff concluded that there was no trigger for public consultation or engagement from this matter, however CNSC staff regularly engage with the public and members of Saskatchewan's Northern Administrative District regarding these sites.

2.3 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* [11] which is applicable to the Cigar Lake and McArthur River operations.

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.

2.3.1 Discussion

While no specific engagement was conducted for this matter by Cameco, updated summaries of the PDPs and PDCEs have been posted to Cameco's public website: Preliminary Decommissioning Plan - Summary - Cigar Lake Operation | Cameco [12]; Preliminary Decommissioning Plan - Summary - McArthur River Operation | Cameco [13].

2.3.2 Conclusion

There are no concerns or recommendations with respect to this matter.

3. MATTERS FOR CONSIDERATION

Under subsection 24(5) of the NSCA, the licensee is required to provide a financial guarantee in a form that is acceptable to the Commission. 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* [7] which is applicable to Cigar Lake and McArthur River.

3.1 Discussion

The licensees are required to review and revise their financial guarantee every 5 years, or when required by the Commission. The previous PDPs and PDCEs were submitted in 2018. As part of the 5-year review cycle, Cameco submitted the Cigar Lake and McArthur River updated PDPs and PDCEs on June 23, 2022 (2,4) and on December 21, 2022 (1,3) respectively, for CNSC and SMOE review. CNSC staff reviewed the updated documents, and final versions were submitted in January 2025, once all technical comments had been addressed.

The current financial guarantees will remain in effect until the Commission accepts the newly proposed financial guarantees.

As a financial instrument, Cameco is proposing to use Letters of Credit (LOC) and Surety Bonds which are valid financial instruments meeting the criteria of the CNSC REGDOC 3.3.1: *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*. Updated financial guarantee instruments (letters of credit and surety bonds) will be submitted by the licensee should the Commission accept the updated financial guarantees. As per the CNSC-SMOE MoU, the financial guarantees will be payable to SMOE.

Cigar Lake

As stated by Cameco in the PDP, the end state objective is to decommission and reclaim the site to an ecological and radiological condition that is as similar as is reasonably achievable to the pre-mining conditions at site and suitable for traditional land use and acceptance into Saskatchewan's Institutional Control Program (ICP) [14]. The PDP outlines the following activities for the decommissioning of infrastructure at the Cigar Lake Operation. This description is taken from the publicly available summary on Cameco's website [12]:

Underground facilities

- Underground hazardous substances will be moved to surface for use or transported off site for recycling or disposal in accordance with applicable regulations
- Surface boreholes will be plugged at depth and grouted to surface
- Any remaining mine water treatment plant residue, mineralized core samples and miscellaneous contaminated solid waste will be placed underground
- The mine will be allowed to flood naturally
- The shafts will be used for disposal of decommissioning waste and capped with an engineered stainless-steel structure

Surface buildings and facilities

- Contaminated surface infrastructure will be dismantled and placed underground or transported off site to an approved facility
- Non-contaminated surface infrastructure will be disassembled and disposed of at the Cigar Lake landfill or transported off site to an approved facility

Waste rock storage areas

- Clean waste rock and overburden will be used as backfill, cover material and/or material for grading and contouring the site to promote drainage and re-vegetation
- Ore from test mining and potentially contaminated waste rock will be moved underground
- Potentially acid generating waste rock will be transported to the Orano Canada Inc. (Orano) McClean Lake Sue C pit

Site access road and security gatehouse

- The site access road will remain in place after decommissioning activities
- The security gatehouse and all unnecessary site access road related materials (e.g., road signs) will be removed and transported to the Cigar Lake landfill

Based on the above planned activities, Cameco has developed and updated their PDCE and increased the financial guarantee for the Cigar Lake Operation from C$61.79 million to C$76.5 million. This increase is due to updated equipment, labour rates, materials and inflation.

McArthur River

As stated by Cameco in the PDP, the end state objective is to decommission and reclaim the site to an ecological and radiological condition that is as similar as is reasonably achievable to the pre-mining conditions at site and suitable for traditional land use and acceptance into the ICP [14]. The PDP outlines the following activities for the decommissioning of infrastructure at the McArthur River Operation. This description is taken from the publicly available summary on Cameco's website [13]:

Underground facilities

- Underground hazardous substances will be moved to surface for use or transported off site for recycling or disposal in accordance with applicable regulations
- Surface boreholes will be grouted in accordance with regulatory requirements
- Any remaining mine water treatment plant residue, mineralized core samples and miscellaneous contaminated solid waste will be placed underground
- The mine will be allowed to flood naturally
- The shafts will be used for disposal of decommissioning waste and capped with an engineered shaft cap

Surface buildings & facilities

- Contaminated surface infrastructure will be dismantled and placed underground or transported off site to an approved facility
- Non-contaminated surface infrastructure will be disassembled and disposed of at the McArthur River landfill or transported off site to an approved facility

Waste rock storage areas

- Clean waste rock and overburden will be used as backfill, cover material and/or material for grading and contouring the site to promote drainage and re-vegetation or be transported to the McArthur River landfill
- Mineralized and potentially acid generating waste rock and waste rock sub-liner materials will be moved underground

Site access road

- The ore haul road will be decommissioned with contaminated material being transported off site to an approved facility and clean material being disposed of in the McArthur River landfill
- All remaining Fox Lake road culverts and bridges will be removed and transported to the McArthur River landfill or Key Lake landfill

Based on the above planned activities, Cameco has developed and updated their PDCE and increased the financial guarantee for the McArthur River Operation from C$42.1 million to C$51.4 million. This increase is due to updated equipment, labour rates, materials and inflation.

3.1.1 Conclusion

CNSC staff's review concluded the PDPs and PDCEs, including the existing and proposed financial instruments, for the Cigar Lake Operation [2, 4] and the McArthur River Operation [1, 3]:

- met the requirements of CSA Group standard, Decommissioning of facilities containing nuclear substances, N294:19 [5]
- met the requirements of CNSC Regulatory Document, REGDOC-2.11.2: *Decommissioning* [6]
- met the requirements of CNSC Regulatory Document, REGDOC-3.3.1: *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities* [7]

CNSC staff concluded from their review of the PDPs and PDCEs that the proposed amount of C$76.5 million is credible for decommissioning the Cigar Lake Operation and that the proposed amount of C$51.4 million is credible for decommissioning the McArthur River Operation.

CNSC staff concluded that the licensee

- is qualified to carry on the activities authorized by the licence; and
- will, in carrying out that activity, 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.

3.2 Amendment of Cigar Lake Operation Licence

A licence amendment for the Cigar Lake Operation is being proposed to reflect a change in the provincial surface lease boundary for the operation.

3.2.1 Discussion

On August 31, 2023, Cameco submitted a request to the Commission Registrar requesting that the CNSC approved an administrative amendment to the Cigar Lake Operation uranium mine licence UML-MINE-CIGAR.00/2031 [15]. The requested amendment was to replace the current drawing in Appendix A with an updated drawing. The updated drawing reflects the amended Cigar Lake boundary within the Cigar Lake Surface Agreement 2011 as amended by the Government of Saskatchewan, which has already considered and accepted this same change. The changes to the surface lease area result in a net reduction of the lease area from 1042 ha to 715 ha, releasing areas undisturbed by mining activities. At the suggestion of CNSC staff, Cameco revised this request on January 9, 2024, to request the amendment be included at the next opportunity when a hearing in writing was to occur, namely for the consideration of the updated financial guarantee for the Cigar Lake Operation [16].

This proposed amendment will not result in any changes to the authorized activities at the Cigar Lake Operation.

3.2.2 Conclusion

CNSC staff recommend that the Cigar Lake licence be amended to include the revised site map.

4. Overall Conclusions and Recommendations

CNSC staff's review concluded that the Preliminary Decommissioning Plans and Preliminary Decommissioning Cost Estimates for the Cigar Lake and McArthur River operations and associated financial guarantee instruments met all applicable requirements and are of a credible amount to decommission each site respectively. CNSC staff further concluded that the proposed change to the Cigar Lake site boundary will not result in any changes to the authorized activities.

CNSC staff recommend the following to the Commission:

1. accept the proposed revised amount of the financial guarantees for the Cigar Lake and McArthur River operations
2. direct Cameco Corporation to submit to the Commission, within 90 days of the publication of a decision, revised financial instruments
3. issue the proposed Uranium Mine Licence (UML-MINE-CIGAR.01/2031) which has an updated site map in Appendix A.

References

1. Correspondence from Mr. R. Schwab (Cameco) to Ms. B. Duhaime (CNSC) re: *Confidential and Proprietary McArthur River Operation Preliminary Decommissioning Plan*, January 10, 2025 (e-Doc 7428940)
2. Correspondence from Mr. T. Hamilton (Cameco) to Mr. R. Snider (CNSC) re: *Confidential and Proprietary Cigar Lake Operation Preliminary Decommissioning Plan*, January 10, 2025 (e-Doc 6824341)
3. Correspondence from Mr. R. Schwab (Cameco) to Ms. B. Duhaime (CNSC) re *Confidential and Proprietary McArthur River Operation Preliminary Decommissioning Cost Estimate*, January 10, 2025 (e-Doc 7428937)
4. Correspondence from Mr. T. Hamilton (Cameco) to Mr. R. Snider (CNSC) re: *Confidential and Proprietary Cigar Lake Operation Preliminary Decommissioning Cost Estimate,* January 10, 2025 (e-Doc 6824342)
5. CSA N294:19 *Decommissioning of facilities containing nuclear substances*
6. REGDOC-2.11.2, *Decommissioning*
7. REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*
8. Correspondence from Mr. S. Kramer (SERM) to Mr. J McManus (SERM) re: *Memorandum of Understanding between The Atomic Energy Control Board and Saskatchewan Environment Resource Management,* March 18, 1996 (e-Doc 3816864)
9. Correspondence from Ms. Lung (SMOE) to Ms. Pouteaux (Cameco) *Acceptance of Cigar Lake Operation: Preliminary Decommissioning Plan and Cost Estimate,* July 16, 2024 (e-Doc 7479851)
10. Correspondence from Mr. C. McGuire (SMOE) to Mr. R. Schwab (Cameco) *Acceptance of McArthur River Operation: Preliminary Decommissioning Plan and Cost Estimate,* March 6, 2024 (e-Doc 7238891)
11. REGDOC-3.2.1, *Public Information and Disclosure*.
12. Preliminary Decommissioning Plan - Summary - Cigar Lake Operation https://www.cameco.com/media/media-library/documents/preliminary-decommissioning-plan-summary-cigar-lake-operation
13. Preliminary Decommissioning Plan - Summary - McArthur River Operation https://www.cameco.com/media/media-library/documents/preliminary-decommissioning-plan-summary-mcarthur-river-operation
14. Institutional Control Program | Mineral Exploration and Mining | Government of Saskatchewan https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/mineral-exploration-and-mining/institutional-control-program
15. Correspondence from Mr. Mooney (Cameco) to Mr. Saumure (Commission Registry) *Amendment to Cigar Lake Operation Uranium Mine Licence UML-MINE-CIGAR.00/2031to Reflect New Provincial Surface Lease Boundary* August 31, 2023 (e-Doc 7122530)
16. Correspondence from Mr. Mooney (Cameco) to Ms. Bacon-Dussault (Commission Registry) *Revised Request: Amendment to Cigar Lake Operation Uranium Mine Licence UML-MINE-CIGAR.00/2031 to Reflect New Provincial Surface Lease Boundary* January 9, 2024 (e-Doc 7199724)

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.

CNSC	Canadian Nuclear Safety Commission
CMD	Commission Member Document
CSA	Canadian Standards Association
ICP	Institutional Control Program
LCH	Licence Conditions Handbook
MoU	Memorandum of Understanding
NSEQC	Northern Saskatchewan Environmental Quality Committee
NSCA	*Nuclear Safety and Control Act*
PDP	Preliminary Decommissioning Plan
PDCE	Preliminary Decommissioning Cost Estimate
REGDOC	CNSC Regulatory Document
SMOE	Saskatchewan Ministry of Environment
U_3O_8	Triuranium octoxide

A. Basis for the Recommendation(s)

A.1 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.

Nuclear Safety and Control Act

- Paragraphs 24(2)(a) and (b) of the *Nuclear Safety Control Act* provide that the Commission may issue, renew, suspend in whole or in part, amend, revoke or replace a licence, or authorize its transfer, on receipt of an application; (a) in the prescribed form; (b) containing the prescribed information and undertakings and accompanied by the prescribed documents.
- Subsection 24(5) of the *Nuclear Safety Control Act* provides that a licence may contain any term or condition that the Commission considers necessary for the purposes of this Act, including a condition that the applicant provide a financial guarantee in a form that is acceptable the Commission.
- Subsection 24(6) of the *Nuclear Safety Control Act* provides that the Commission may authorize the application of the proceeds of any financial guarantee.

General Nuclear Safety and Control Regulations

- The *General Nuclear Safety and Control Regulations* 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.

Uranium Mines and Mills Regulations

- The *Uranium Mines and Mills Regulations* requires under subparagraph 3(a)(viii) the proposed plan for the decommissioning of the mine or mill.

A.2 Technical Basis

CNSC staff's recommendations to the Commission within this CMD are supported on a technical basis and comparison by the following documents, which are both sufficient and adequate:

CSA Group standard N294:19, Decommissioning of facilities containing nuclear substances.

CNSC Regulatory Document REGDOC-2.11.2, *Decommissioning*

CNSC Regulatory Document REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*

PART 2

Part 2 of this CMD provides all relevant information pertaining directly to the licence, including:

1. The current Uranium Mine Licence UML-MINE-MCARTHUR.00/2043
2. The current Uranium Mine Licence UML-MINE-CIGAR.00/2031
3. The proposed Uranium Mine Licence UML-MINE-CIGAR.01/2031
4. The draft Licence Conditions Handbook for the McArthur River Operation
5. The draft Licence Conditions Handbook for the Cigar Lake Operation

Current Licence – McArthur River Operation

URANIUM MINE LICENCE
CAMECO CORPORATION
MCARTHUR RIVER OPERATION

I) LICENCE NUMBER: UML-MINE-MCARTHUR.00/2043

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

Cameco Corporation
2121 – 11th Street West
Saskatoon, Saskatchewan S7M 1J3
Corporate Number 332981-0

III) LICENCE PERIOD:

This licence is valid from November 1, 2023 to October 31, 2043, unless otherwise suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

a) prepare a site for and construct, operate, modify and decommission a nuclear facility (hereinafter "the facility") at a site known as the McArthur River Operation in the province of Saskatchewan as shown on the drawing referenced in appendix A to this licence;

b) mine a nuclear substance (uranium ore);

c) possess, transfer, import, use, store, and dispose of nuclear substances; and

d) possess, transfer, import, use prescribed equipment that is required for or associated with laboratory studies, field studies, fixed gauge usage and borehole logging devices in relation to (a) and (b).

V) EXPLANATORY NOTES:

a) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

b) 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.

c) The UML-MINE-MCARTHUR.00/2043 Licence Conditions Handbook (LCH) identifies the criteria that will be used by Canadian Nuclear Safety Commission staff to assess the licensee's compliance with the conditions listed in this licence. The LCH also provides information regarding delegation of authority and applicable version control of documents comprising compliance verification criteria.

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.

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.

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 maintain a decommissioning plan.

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.

Date October 24, 2023

Dr. Timothy Berube, Acting President
on behalf of the Canadian Nuclear Safety Commission

APPENDIX A

LOCATION OF CAMECO'S OPERATION AT MCARTHUR RIVER

The location of the Cameco's operation at McArthur River is provided on Drawing No. MC431-G-011 (e-Doc 6974387).


AREA = 1425 HECTARES
GENERAL NOTES
1. AS PER MCARTHUR RIVER MINE SURFACE LEASE PROPERTY NO. 200697, 2010 REVISION.
12000 N 7000 E
12000 N 8000 E
11000 N 7000 E
10000 N 6250 E
7000 N 8000 E
7000 N 8250 E
6000 N 6250 E
6000 N 6550 E
MINE GRID NORTH
MAGNETIC NORTH
TRUE NORTH
McARTHUR RIVER OPERATION
ENVIRONMENT
SITE PLAN
AERIAL 2021
SURFACE LEASE
MC431-G-011
Cameco
DMS #16447

Current Licence – Cigar Lake Operation

URANIUM MINE LICENCE
CAMECO CORPORATION
CIGAR LAKE OPERATION

I) LICENCE NUMBER: UML-MINE-CIGAR.00/2031

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

Cameco Corporation
2121 – 11th Street West
Saskatoon, Saskatchewan S7M 1J3
Corporate Number 332981-0

III) LICENCE PERIOD:

This licence is valid from July 1, 2021 to June 30, 2031, unless otherwise suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

a) prepare a site for and construct, operate, modify and decommission a nuclear facility (hereinafter "the facility") at a site known as the Cigar Lake Operation in the province of Saskatchewan as shown on the drawing referenced in appendix A to this licence;

b) mine a nuclear substance (uranium ore);

c) possess, transfer, import, use, store, and dispose of nuclear substances; and

d) possess, transfer, import, use prescribed equipment that is required for or associated with laboratory studies, field studies, fixed gauge usage and borehole logging devices in relation to (a) and (b).

V) EXPLANATORY NOTES:

a) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

b) 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.

c) The UML-MINE-CIGAR.00/2031 Licence Conditions Handbook (LCH) identifies the criteria that will be used by Canadian Nuclear Safety Commission staff to assess the licensee's compliance with the conditions listed in this licence. The LCH also provides information regarding delegation of authority and applicable version control of documents comprising compliance verification criteria.

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.

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.

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 maintain a decommissioning plan.

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 24th day of June, 2021.

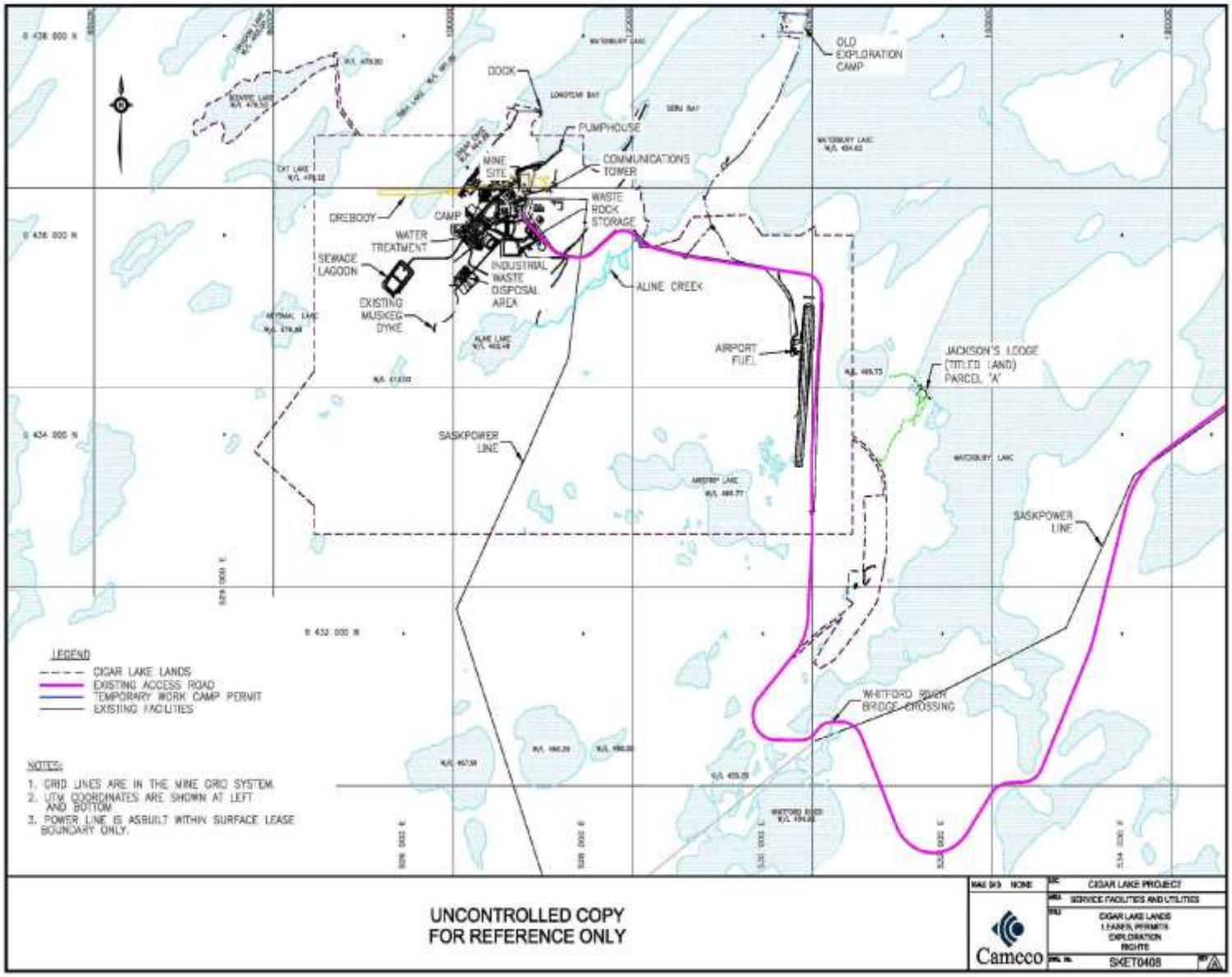
_____

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

APPENDIX A

LOCATION OF CAMECO'S OPERATION AT CIGAR LAKE

The location of the Cameco's operation at Cigar Lake is shown on Drawing SKET0408, Rev A.



e-Doc 6327069 (Word)
e-Doc 6327190 (PDF)

Proposed Licence Changes – Cigar Lake Operation

Amendment to replace the current drawing in Appendix A of the licence to reflect the amended Cigar Lake Surface Lease Agreement 2011, as amended by the Government of Saskatchewan, effective April 1, 2023.

No other changes to the licence content are proposed.

Proposed Licence – Cigar Lake Operation

URANIUM MINE LICENCE
CAMECO CORPORATION
CIGAR LAKE OPERATION

I) LICENCE NUMBER: UML-MINE-CIGAR.01/2031

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

Cameco Corporation
2121 – 11th Street West
Saskatoon, Saskatchewan S7M 1J3
Corporate Number 332981-0

III) LICENCE PERIOD:

This licence is valid from July 1, 2021 to June 30, 2031, unless otherwise suspended, amended, revoked or replaced.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

a) prepare a site for and construct, operate, modify and decommission a nuclear facility (hereinafter "the facility") at a site known as the Cigar Lake Operation in the province of Saskatchewan as shown on the drawing referenced in appendix A to this licence;

b) mine a nuclear substance (uranium ore);

c) possess, transfer, import, use, store, and dispose of nuclear substances; and

d) possess, transfer, import, use prescribed equipment that is required for or associated with laboratory studies, field studies, fixed gauge usage and borehole logging devices in relation to (a) and (b).

V) EXPLANATORY NOTES:

a) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

b) 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.

c) The UML-MINE-CIGAR.00/2031 Licence Conditions Handbook (LCH) identifies the criteria that will be used by Canadian Nuclear Safety Commission staff to assess the licensee's compliance with the conditions listed in this licence. The LCH also provides information regarding delegation of authority and applicable version control of documents comprising compliance verification criteria.

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.

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.

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 maintain a decommissioning plan.

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.

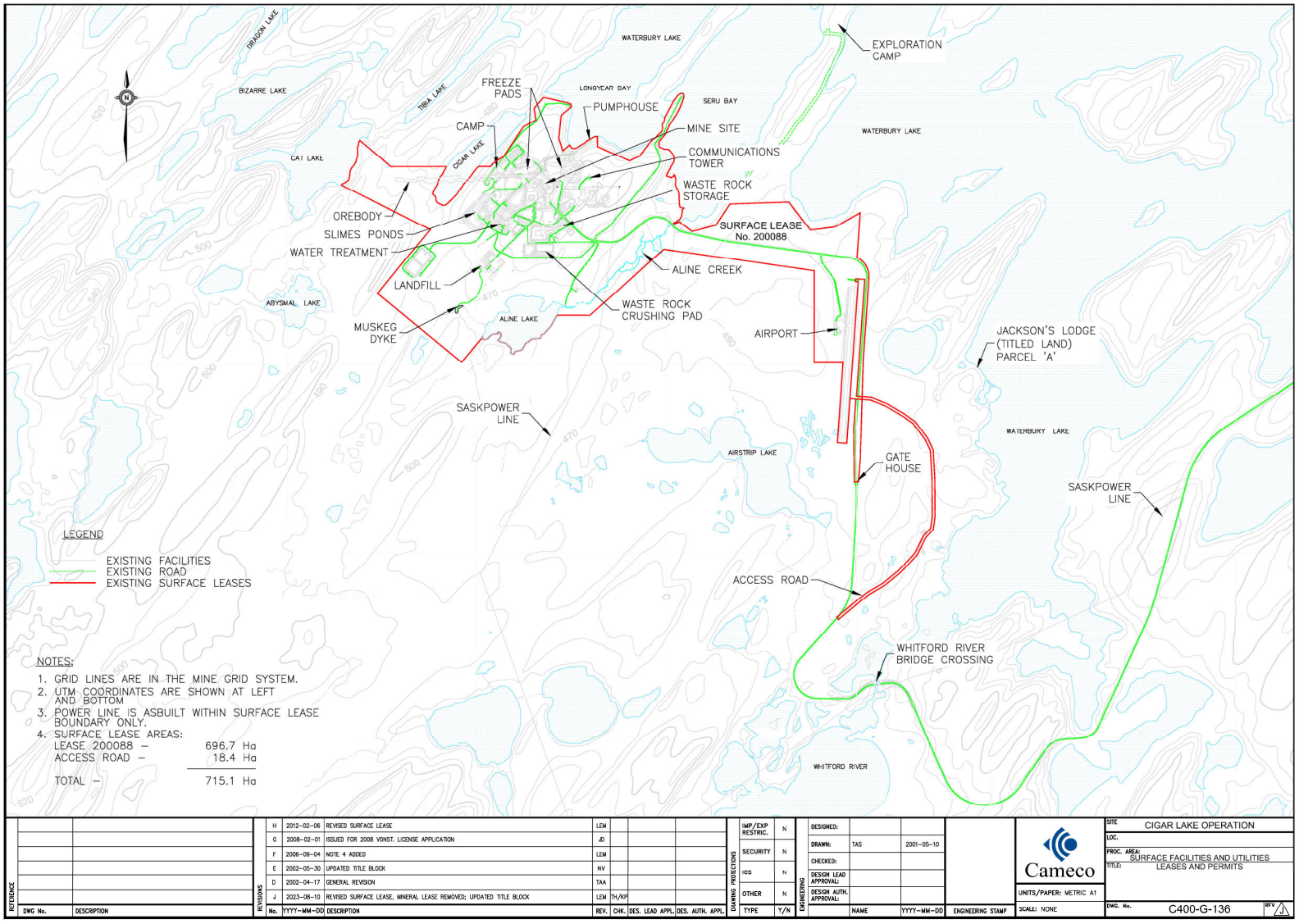
SIGNED this _____ day of _____, 2025.

_____
Pierre Tremblay, President
on behalf of the Canadian Nuclear Safety Commission

APPENDIX A

LOCATION OF CAMECO'S OPERATION AT CIGAR LAKE

The location of the Cameco's operation at Cigar Lake is shown on Drawing C400-G-136, Rev. J.



e-Doc 7410787(Word)
e-Doc 7410814 (PDF)

Draft Licence Conditions Handbook – McArthur River Operation

Canada's Nuclear Regulator

e-Doc 6899315 (Word)
e-Doc 6961356 (PDF)

LICENCE CONDITIONS HANDBOOK

LCH-MINE-MCARTHUR.00/2043

MCARTHUR RIVER OPERATION URANIUM MINE LICENCE

UML-MINE-MCARTHUR.00/2043

Revision 1

Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

Canada

Licence Conditions Handbook **Effective: April X, 2025**

LCH-MILL-MCARTHUR.00/2043, Revision 1

McArthur River Operation

Uranium Mine Licence

UML-MINE-MCARTHUR.00/2043
(April 12, 2024)

SIGNED at OTTAWA this X day of April 2025

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

Revision History:

Effective Date	Revision	Section(s) Changed	Description of the Changes	DCR e-Doc
April 12, 2024	0	N/A	Original Document. Updated REGDOC listings, updated to reflect new licence and LCH number from LCH issued as part of past licence	6899315 (Word) 6961356 (PDF)
April X, 2025	1	Throughout	Updating REGDOCs/standards references, removing e-access references, administrative corrections	6899315 (Word) 6961356 (PDF)

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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 positions:

- 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.

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

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 Cameco Corporation (Cameco) to conduct the following undertakings at the McArthur River Operation, for which the CNSC provides regulatory oversight:

- operate and modify an underground mine, including an associated underground ore-treatment system, to a maximum output of 9.6 million kilograms of uranium per year
- transfer, by use of a surface load-out system, of the treated uranium ore to another facility authorized by the CNSC to accept the nuclear substance
- operation and changes to the dewatering and water management systems, including water treatment plant
- disposal of contaminated wastes, including off-site
- storage of clean waste rock, potentially acid generating rock and low-grade mineralize material
- authorized decommissioning and reclamation
- possession, storage, transfer, importation, use and disposal of nuclear substances and radiation devices.

An environmental assessment carried out in 1995 (e-Doc 4140075) and addendum in 1996 (e-Doc 557708) evaluated the environmental effects from the operation of the mine at an annual production rate up to 7.2 million kilograms of uranium per year. In April 2015, CNSC staff confirmed that annual production rates of 9.6 million kilograms of uranium was within the licensing basis (e-Doc 4699846).

In 2009, the *Ecological Risk Assessment of the Effects of Discharge from Treated Water from a Rapid Inflow Event at the McArthur River Operation* (e-Doc 3398615) was published in response to the 2003 uncontrolled inflow event.

Ore at the McArthur River Operation is transported to Cameco's Key Lake uranium mill for further processing and therefore, no tailings are stored at the site.

On October 23, 2019, an application by Cameco to change the definition of "low grade mineralized material" from 2 percent to 3 percent uranium by mass, CNSC staff confirmed this change is within the licensing basis (e-Doc 6021834). "Low grade mineralized material" is transferred by road conveyance to the Key Lake Operation in IP-I packages.

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 two 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 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 result in operational activities not being in accordance with the licensing basis must be approved by the Commission prior to implementation.

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.

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 (e-Doc 5885939).

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 that there is adequate time for CNSC staff to review and evaluate information provided in prior written notifications in advance of any of these proposed changes being implemented. It remains the responsibility of the licensee to ensure that the McArthur River Operation continues to operate within the bounds of the licencing 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. The facility's current financial guarantee is covered by specific financial instruments as listed below.

The latest revision of the preliminary decommissioning plan (PDP) and estimation of the cost of decommissioning were finalized in Cameco's *Preliminary Decommissioning Plan & Preliminary Cost Estimate*, May 2019 (e-Doc 7202600), Record of Decision (e-Doc 5934774). The Commission accepted the financial guarantee, as outlined in the table below on April X, 2025 (e-doc XXXXX) *** SUBJECT TO COMMISSION DECISION***

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CSA Group	Decommissioning of Facilities Containing Nuclear Substances	N294:19
CNSC	Decommissioning	REDOC-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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Preliminary Decommissioning Plan and Preliminary Decommissioning Cost Estimate	Yes
Cameco	RBC Letter of Credit P100095 for CAD$ 16,867,312	Yes
Cameco	CIBC Letter of Credit SBGT744174 for CAD$ 19,012,458	Yes
Orano	LMIC Bond BDTO-860117-020 (Surety Bond Rider No. 1) for CAD$ 15,520,230	Yes

GENERAL

The financial guarantee for decommissioning the McArthur River Operation shall be reviewed and revised by the licensee every five years; when requested by the Commission; or following a revision of the Preliminary Decommissioning Plan or Preliminary Decommissioning Cost Estimate that significantly impacts the financial guarantee. The current preliminary decommissioning plan and preliminary decommissioning cost estimate are dated December 2024.

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 REGDOC 3.3.1. Any change to the type of financial instrument requires prior notification to the CNSC. 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.

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

* Cameco to post summaries of Environmental Risk Assessments on their website, rather than the entire document, in accordance with Cameco's June 4, 2020 letter to the CNSC (L. Mooney to H. Tadros, e-Doc 6318384) and Cameco's June 12, 2020 email (K. Nagy to R. Snider, e-Doc 6316951).

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Public Information Program	Yes

Guidance

Guidance Publications

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

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 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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Quality Management Program	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Management System	REGDOC-2.1.1

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Training and Development Program	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Human Factors	REGDOC-2.2.1

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Environmental Code of Practice (Appendix B of the Environmental Protection Program – Code of Practice)	Yes
Cameco	Radiation Code of Practice (Appendix C of Radiation Protection Program – Code of Practice)	Yes
Cameco	Quality management Program	Yes
Cameco	Waste Management Program	Yes
Cameco	Mine Operations Program	Yes
Cameco	Ore Processing Program	Yes

Guidance

There is no guidance provided for this licence condition.

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 Substance 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 a October 4, 2021 letter from CNSC to Cameco (P. Fundarek to K. Nagy, e-Doc 6653493).

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

In accordance with Record of Decision *DEC 23-H6, In the Matter of Cameco Corporation Application to Renew the Uranium Mine Licence for the McArthur River Operation, Saskatchewan,* dated October 24, 2023 (e-Doc 7144754), Cameco shall provide a comprehensive review and update to the Commission on the conduct of its licensed activities at the McArthur River Operation every 7 years of license period, i.e., in 2030 and 2037. These updates will be made at a public proceeding.

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-processing 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
Cameco	Radiation Protection Program (Appendix B- Authorized Nuclear Substances and Nuclear Devices Lists)	Yes

The authorized possession limits for unsealed nuclear substances are:

Nuclear Substance	Maximum Total Quantity in Possession
Radium-226	355 kBq

The maximum authorized quantity of nuclear substances per sealed source is:

Nuclear Substance	Maximum Quantity per Sealed Source
Americium-241	1.00 KBq
Radium-226	20 kBq
Cesium-137	18.5 GBq
Uranium – Natural	30 MBq
Uranium – Depleted	30 MBq
Cobalt-60	100 kBq
Thallium-204	1 MBq
Polonium-210	370 MBq

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	18.5 GBq
Tracero	Cesium-137	7.4 GBq
Tracero	Cobalt-60	370 MBq

Note: Includes provision for replacement sources for these radiation devices.

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 µSv/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.

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Mining Operations Program	Yes
Cameco	Waste Management Program	Yes
Cameco	Safety and Health Management Program	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 Modeling 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 conducted when planning non-routine and complex work activities.

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.

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Quality management Program	Yes
Cameco	Ore Processing Program	Yes
Cameco	Mining Operations Program	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	General Design Considerations: Human Factors	REGDOC-2.5.1

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Maintenance Program	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.

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.

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), with social and economic factors being taken into account.

Compliance Verification Criteria

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Radiation Protection Program	Yes
Cameco	Mining Facility Licensing Manual	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.

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 five years in order to validate their effectiveness. The results of such reviews should be provided to the CNSC.

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Radiation Protection	REGDOC-2.7.1
CNSC	Dosimetry, Volume I: Ascertaining Occupational Dose	REGDOC-2.7.2
CNSC	Preparing Codes of Practice to Control Radiation Doses at Uranium Mines and Mills	G-218

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 its 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	Z94.4-11

Licensee Documents that Require Notification of Change

Source	Document Title	Notification Requirements
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Safety and Health Management Program	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.

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	Document Number
CNSC	Conventional Health and Safety	REGDOC-2.8.1

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 Management of Nuclear Facilities: Common requirements of the CSA N288 series of Standards, 2022	N288.0:22
CSA Group	Environmental Monitoring Programs at 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

*Assessment and implementation of REGDOC-2.9.2 is tied to the update of the Environmental Risk Assessment for the McArthur River Operation, which is scheduled to be submitted by the end of 2025. Cameco anticipates completing an assessment that considers the proposed Licenced Release Limits in accordance with REGDOC-2.9.2 by the first calendar quarter of 2026, at which time an updated timeline for full implementation will be provided by Cameco.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Environmental Protection Program	Yes
Cameco	Waste Management Program	Yes
Cameco	McArthur River Operation Environmental Risk Assessment, December 2020	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 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 below. 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.

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_3O^+) reported as pH	In a range of 6.0 to 9.5

Acutely Lethal Effluent	0%

ENVIRONMENTAL PROTECTION

Notes:

1) Authorized release limits have been harmonized, where available, with those required under the *Metal and Diamond Mining Effluent Regulations* (MDMER).
2) Definition of Units: mg/L = milligrams per litre
   Bq/L = becquerels per litre
3) All concentrations and activities are total values.
4) "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.
5) "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.
6) "Grab sample" means a quantity of undiluted effluent collected at any given time.
7) ***"Acutely lethal"*** (Source MDMER), in respect of an effluent, means that the effluent at 100 percent concentration kills
   a) more than 50 percent 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 percent of the threespine stickleback subjected to it for a period of 96 hours, when tested in accordance with the acute lethality test set out in section 14.2; or
   c) more than 50 percent 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

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 accepted by CNSC staff for Saskatchewan uranium mine and mill sites are described in January 30, 2020 letter from Cameco to the CNSC (K. Nagy to H. Tadros, e-Doc 6109667).*

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Emergency Preparedness and Response Program	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.

Preamble

Licensees 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 *, **	N/A
NRC	National Fire Code of Canada*, **	N/A
CSA Group	Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances**	N393:13

* 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*. Cameco is required to comply with the most recent versions of the NBC and NFC as adopted by the province of Saskatchewan.

** Cameco's original implementation date of December 31, 2023 was not met. CNSC staff and Cameco are working to establish a new implementation date for this standard and have also agreed to work towards being compliant with N393-22. CSA N393-13 references the 2010 versions of the National Building Code of Canada and the National Fire Code of Canada, while CSA N393-22 references the 2020 versions of those codes and Cameco also intends to be compliant with the 2020 version of these codes.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Fire Protection Program	Yes

Guidance

Guidance Publications

There is no guidance provided for this licence condition.

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.

Waste management facilities at the McArthur River Operation include:

- storage areas for low-grade mineralized material and potentially acid-generating waste rock
- clean waste rock and overburden piles
- water treatment plant – mine water collection, contaminated surface drainage,
- contaminated water handling and storage and discharges
- hazardous substance or waste dangerous goods storage facilities
- site run-off containment systems and ponds
- contaminated industrial waste storage
- storage and recycling facilities for hazardous wastes
- landfill for uncontaminated industrial and domestic waste
- domestic sewage treatment.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Waste Management, Volume I: 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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Waste Management Program	Yes

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 "reduce, reuse, recycle and recover" principle.

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 and evaluated.

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, Canadian Dam Safety Guidelines	N/A

WASTE MANAGEMENT

Licence Condition 11.2

The licensee shall maintain a decommissioning plan.

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 principle 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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Preliminary Decommissioning Plan and Preliminary Decommissioning Cost Estimate	Yes

The PDP is to be revised at a minimum of every five years or when required by the Commission; however, is to be kept current to reflect any changes in the site or nuclear facility. The current PDP and PDCE are dated December 2024.

Guidance

There is no guidance provided for this licence condition

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

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual (section 6.9)	Yes
Cameco	Security Program	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 mining facility and to areas within the facility where nuclear substances are stored.

12.1.4 Reasonable measures are implemented to prevent the unauthorized loss, alternation, 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

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
Cameco	Security Program	Yes
Cameco	Mining Facility Licencing Manual	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.

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.

14. PACKAGING AND TRANSPORT

Licence Condition 14.1

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

Preamble

The "packaging and transport" safety and control area covers the safe packaging and transport of nuclear substances to and from the licensed facility.

Every person who transports radioactive material, or requires it to be transported, shall act in accordance with the requirements of Transport Canada's *Transportation of Dangerous Goods Regulations* and the CNSC's *Packaging and the Transport of Nuclear Substances Regulations, 2015*.

The *Packaging and Transport of Nuclear Substances Regulations, 2015* and the *Transportation of Dangerous Goods Regulations* provides 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

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Transportation Program	Yes

The licensee shall implement and maintain a packaging and transport program that will ensure compliance with the requirements set out in the *Transportation of Dangerous Goods Regulations* and in the *Packaging and Transport of Nuclear Substances Regulations, 2015*.

Guidance

There is no guidance provided for this licence condition.

15. FACILITY SPECIFIC

There are no facility-specific licence conditions.

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).

Change Request Form

1. GENERAL INFORMATION			
File Plan #		**e-Doc #(s) for Change Request Form**	
Licensee	**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

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.)

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
- Cameco Corporation

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

APPENDIX B LICENSEE DOCUMENTS THAT REQUIRE NOTIFICATION OF CHANGE

Document Title
Mining Facility Licensing Manual
Preliminary Decommissioning Plan and Preliminary Decommissioning Cost Estimate
Public Information Program
Quality Management Program
Training and Development Program
Radiation Protection Program
Mining Operations Program
Ore Processing Program
Maintenance Program
Safety and Health Management Program
Environmental Protection Program
Emergency Preparedness and Response Program
Fire Protection Program Manual
Security Program
Waste Management Program
Transportation Program
McArthur River Operation Environmental Risk Assessment, 2020
RBC Letter of Credit P100095 for CAD$ 16,867,312
CIBC Letter of Credit SBGT744174 for CAD$ 19,012,458
LMIC Bond BDTO-860117-020 (Surety Bond Rider No. 1) for CAD$ 15,520,230

APPENDIX C LIST OF DOCUMENTS USED AS GUIDANCE OR COMPLIANCE VERIFICATION CRITERIA

Note: For CNSC documents, the most recent version of a referenced document shall be implemented following review and agreement between Cameco and the Canadian Nuclear Safety Commission.

Document	Document Title	Document Number
Canadian Dam Association	Canadian Dam Association, Canadian Dam Safety Guidelines	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 Factors	REGDOC-2.2.1
CNSC	Safety Analysis for Class IB Nuclear Facilities	REGDOC-2.4.4
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	Controlling Releases to the Environment	REGDOC-2.9.2
CNSC	Dosimetry, Volume I: Ascertaining Occupational Dose	REGDOC-2.7.2
CNSC	Personnel Training, Version 2	REGDOC-2.2.2
CNSC	Nuclear Emergency Preparedness and Response, Version 2	REGDOC-2.10.1
CNSC	Decommissioning	REGDOC-2.11.2
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	Design of Uranium Mines and Mills: Ventilation Systems	REGDOC-2.5.4
CNSC	Conventional Health and Safety	REGDOC-2.8.1
CNSC	Waste Management, Volume II: Management of Uranium Mine Waste Rock and Mill Tailings	REGDOC-2.11.1

Document	Document Title	Document Number
CNSC	Security of Nuclear Substances: Sealed Sources and Category 1, II and II Nuclear Material, Version 2.1	REGDOC-2.12.3
CNSC	Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills	REGDOC-3.1.2
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 Nuclear Facilities and Uranium Mines and Mills	N288.4:19
CSA Group	Effluent and Emissions Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills	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	Selection, use and care of respirators	Z94.4:18
CSA Group	Environmental Management Systems – Requirements with Guidance for Use	ISO 14001:2015
NRC	National Building Code of Canada	N/A
NRC	National Fire Code of Canada	N/A
CSA Group	Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances	N393-13

APPENDIX C

Draft Licence Conditions Handbook – Cigar Lake Operation

Canada's Nuclear Regulator

e-Doc 7141158 (Word)
e-Doc 7178095 (PDF)

LICENCE CONDITIONS HANDBOOK

LCH-MINE-CIGAR.01/2031

CIGAR LAKE OPERATION
URANIUM MINE LICENCE

UML-MINE-CIGAR.01/2031

Revision 5

Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

Canada

Licence Conditions Handbook **Effective: April XX, 2025**

LCH-MINE-CIGAR.00/2031, Revision 5

Cigar Lake Operation

Uranium Mine Licence

UML-MINE-CIGAR.01/2031
(Effective: July 1, 2021)

SIGNED at OTTAWA this XXth day of April 2025

_____

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

Revision History:

Effective Date	Revision	Section(s) Changed	Description of the Changes	DCR e-Doc
July 9, 2013	0	N/A	Original document.	4056563 (Word) 4068688 (PDF)
January 23, 2014	1	1.2, 1.3, 4.1, 4.3, 10.2, 14.1, Appendix A & C	Formatting changes, updated text on delegation of authority for consistency between Uranium Mines and Mills LCH's, updated text on reporting for consistency, updated references, added table of radiation devices.	4170399 (Word) 4068688 (PDF)
Not published	2	A11	Licence and LCH modernization: new standard licence conditions and updated LCH text and format. Revised financial guarantee value.	6274206 (Word) 6286325 (PDF)
September 24, 2021	3		Licence renewal: updated reference standards. CNSC regulatory documents. SCA introductions. Added CNSC REGDOC-2.7.1 and REGDOC-2.7.2. Removed guidance documents superseded.	6327194 (Word) 6327196 (PDF)
March 20, 2024	4	Throughout	Updating REGDOC/standards and program documents, adding reference to licensee documents tracking file.	7141158 (Word) 7178095 (PDF)
February XX, 2025	5	Throughout	Updating REGDOCs/standards references, removing e-access numbers from programs/manuals and administrative corrections	7141158 (Word) 7178095 (PDF)

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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 positions:

- 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

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

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 Cameco Corporation (Cameco) to conduct the following undertakings at the Cigar Lake Operation, for which the CNSC provides regulatory oversight:

- operation and changes to the underground mine, underground ore-processing facility and surface ore load-out facility
- transfer of the treated uranium ore to another facility, by use of a surface load-out system, authorized by the CNSC to accept the nuclear substance
- mining up to 7.0 million kilograms of uranium per year, with a production flexibility up to 9.25 million kilograms of uranium per year
- operation and changes to the dewatering and water management systems, including water treatment plant
- disposal of contaminated wastes, including off-site
- storage of clean, potentially acid generating and mineralized waste rock
- authorized decommissioning and reclamation
- possession, storage, transfer, importation, use and disposal of nuclear substances and radiation devices.

Environmental assessments, first carried out in 1995 (e-doc 7240719) and most recently the environmental risk assessment completed in 2021, have evaluated the environmental effects from Cameco's operation at Cigar Lake at an annual production rate up to 7.0 million kilograms of uranium. Production flexibility allows the licensee to recoup production shortfalls experienced throughout the mine operation. An increase above the authorized annual production rate of 7.0 million kilograms of uranium per year, or above the production flexibility of 9.25 million kilograms of uranium per year, would need to be reviewed by CNSC staff, including an evaluation of whether the production rate remains within the licensing basis.

Ore at the Cigar Lake Operation is transported to Orano's McClean Lake Operation uranium mill for processing and therefore there is no tailings are stored at the site.

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 two 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 result in operational activities not being in accordance with the licensing basis must be approved by the Commission prior to implementation.

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.

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 (e-Doc 7136211).

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 that there is adequate time for CNSC staff to review and evaluate information provided in prior written notifications in advance of any of these proposed changes being implemented. It remains the responsibility of the licensee to ensure that the Cigar 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. The facility's current financial guarantee is covered by specific financial instruments as listed below.

The latest revision of the preliminary decommissioning plan (PDP) and estimation of the cost of decommissioning were finalized in Cameco's *Preliminary Decommissioning Plan & Preliminary Cost Estimate,* June 2019. The Commission accepted the financial guarantee, as outlined in the table below, on February XX, 2025 (e-doc XXXXX). *** SUBJECT TO COMMISSION DECISION***

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CSA Group	Decommissioning of Facilities Containing Nuclear Substances	N294:19
CNSC	Decommissioning	REDOC-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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Preliminary Decommissioning Plan and Cost Estimate	Yes
Cameco	BNS Letter of Credit OSB67120GWS(Amendment no. 2), CAD $30,973,080.00	Yes
Cameco	CIBC Letter of Credit SBGT753911, CAD $10,755,375.00	Yes
Orano	LMIC Security Bond BDTO-860159-020 (Surety Bond Rider No. 2), CAD $30,946,545.00	Yes
TEPCO	SMBC Letter of Credit CB/LG/16-006 (amended), CAD $3,825,000.00	Yes

GENERAL

The financial guarantee for decommissioning the Cigar Lake Operation shall be reviewed and revised by the licensee every 5 years; when required by the Commission; or following a revision of the preliminary decommissioning plan that significantly impacts the financial guarantee. The current preliminary decommissioning plan and preliminary decommissioning cost estimate are dated December 2024.

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 REGDOC 3.3.1. Any change to the type of financial instrument requires prior notification to the CNSC. 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.

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

* Cameco to post summaries of Environmental Risk Assessments on their website, rather than the entire document, in accordance with Cameco's June 4, 2020 letter to the CNSC (L. Mooney to H. Tadros, e-Doc 6318384) and Cameco's June 12, 2020 email (K. Nagy to R. Snider, e-Doc 6316951).

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Public Information Program	Yes

Guidance

Guidance Publications

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

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 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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Quality Management Program	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Management System	REGDOC-2.1.1

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Training and Development Program	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Human Factors	REGDOC-2.2.1

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Mine Facility Description Manual	Yes
Cameco	Environmental Code of Practice (Appendix A of the Environmental Management Program – Code of Practice)	Yes
Cameco	Radiation Code of Practice (Appendix C of Radiation Protection Program – Code of Practice)	Yes
Cameco	Quality Management Program	Yes
Cameco	Waste Management Program	Yes
Cameco	Mining Operations Program	Yes
Cameco	Process Operations Programs	Yes

Guidance

There is no guidance provided for this licence condition.

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 a October 4, 2021 letter from CNSC to Cameco (P. Fundarek to K. Nagy, e-Doc 6653493).

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

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
Cameco	Radiation Protection Program (Appendix B – Authorized Nuclear Substance and Nuclear Devices List)	Yes

The authorized possession limits for unsealed nuclear substances are:

Nuclear Substance	Maximum Total Quantity in Possession
Barium-133	4 MBq
Radium-226	0.4 MBq

The maximum authorized quantity of nuclear substances per sealed source is:

Nuclear Substance	Maximum Quantity per Sealed Source
Americium-241	0.037 MBq
Cesium-137	7.4 GBq
Cobalt-60	3.7 MBq
Curium-244	0.037 MBq
Plutonium-238	0.037 MBq
Radium-226	0.037 MBq
Strontium-90	0.037 MBq
Thorium-230	0.037 MBq
Thallium-204	3.7 MBq
Uranium-238	5 kBq

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	7.4 GBq
Mount Sopris - LLP-2676*	Americium-241/Be	111 GBq

Note: The above table includes provision for replacement sources for these radiation devices.
* Down hole logging instrument used by Cameco geology department

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 µSv/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.

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Environmental Protection Program	Yes
Cameco	Waste Management Program	Yes
Cameco	Safety and Health Management Program	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 Modeling 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 conducted when planning non-routine and complex work activities are discussed under operating performance.

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.

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Mining Facility Description Manual	Yes
Cameco	Quality Management Program	Yes
Cameco	Mining Operations Program	Yes
Cameco	Process Operations Program	Yes

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	General Design Considerations: Human Factors	REGDOC-2.5.1

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Maintenance Program	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.

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.

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), with social and economic factors being taken into account.

Compliance Verification Criteria

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Radiation Protection Program	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.

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 five years in order to validate their effectiveness. The results of such reviews should be provided to the CNSC.

Guidance

Guidance Publications

Source	Document Title	Document Number
CNSC	Radiation Protection	REGDOC-2.7.1
CNSC	Dosimetry, Volume I: Ascertaining Occupational Dose	REGDOC-2.7.2
CNSC	Preparing Codes of Practice to Control Radiation Doses at Uranium Mines and Mills	G-218

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 its 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	Z94.4-11

Licensee Documents that Require Notification of Change

Source	Document Title	Notification Requirements
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Safety and Health Management Program	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.

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	Document Number
CNSC	Conventional Health and Safety	REGDOC-2.8.1

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 Management of Nuclear Facilities: Common requirements of the CSA N288 series of Standards, 2022	N288.0:22
CSA Group	Environmental Monitoring Programs at 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

* Assessment and implementation of REGDOC-2.9.2 is tied to the update of the Environmental Risk Assessment for the Cigar Lake Operation, which is scheduled to be submitted by the end of 2026. Cameco anticipates completing an assessment that considers the proposed Licenced Release Limits in accordance the REGDOC-2.9.2 by the first calendar quarter of 2027 at which time an updated timelines for full implementation will be provided by Cameco.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Environmental Management Program	Yes
Cameco	Waste Management Program	Yes
Cameco	Cigar Lake Operation Environmental Risk Assessment (2021)	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 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 below. 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.

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_3O^+) reported as pH	In a range of 6.0 to 9.5

Acutely Lethal Effluent	0%

ENVIRONMENTAL PROTECTION

Notes:

1) Authorized release limits have been harmonized, where available, with those required under the *Metal and Diamond Mining Effluent Regulations* (MDMER).
2) Definition of Units: mg/L = milligrams per litre
   Bq/L = becquerels per litre
3) All concentrations and activities are total values.
4) "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.
5) "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.
6) "Grab sample" means a quantity of undiluted effluent collected at any given time.
7) ***"Acutely lethal"*** (Source MDMER), in respect of an effluent, means that the effluent at 100 percent concentration kills
   a) more than 50 percent 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 percent of the threespine stickleback subjected to it for a period of 96 hours, when tested in accordance with the acute lethality test set out in section 14.2; or
   c) more than 50 percent 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

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 accepted by CNSC staff for Saskatchewan uranium mine and mill sites are described in January 30, 2020 letter from Cameco to the CNSC (K. Nagy to H. Tadros, e-Doc 6109667).*

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Emergency Preparedness and Response Program	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.

Preamble

Licensees 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*, **	N/A
NRC	National Fire Code of Canada*, **	N/A
CSA Group	Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances**	N393:13

* 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*. Cameco is required to comply with the most recent versions of the NBC and NFC as adopted by the province of Saskatchewan.

** Cameco's original implementation date of December 31, 2023 was not met. CNSC staff and Cameco are working to establish a new implementation date for this standard and have also agreed to work towards being compliant with N393-22. CSA N393-13 references the 2010 versions of the National Building Code of Canada and the National Fire Code of Canada, while CSA N393-22 references the 2020 versions of those codes and Cameco also intends to be compliant with the 2020 version of these codes.

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Fire Protection Program	Yes

Guidance

Guidance Publications

There is no guidance provided for this licence condition.

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.

Waste management facilities at the Cigar Lake Operation include:

- clean, potentially acid generating and mineralized waste rock piles
- overburden piles
- site run-off containment ponds
- drill core storage areas
- contaminated industrial waste storage
- storage and recycling facilities for hazardous wastes
- landfill for uncontaminated industrial and domestic waste
- domestic sewage treatment.

Compliance Verification Criteria

Licensing Basis Publications

Source	Document Title	Document Number
CNSC	Waste Management, Volume I: 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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Waste Management Program	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 "reduce, reuse, recycle and recover" principle.

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 and evaluated.

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, Canadian Dam Safety Guidelines	N/A

Licence Condition 11.2

The licensee shall maintain a decommissioning plan.

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 principle 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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Preliminary Decommissioning Plan (PDP) and Preliminary Decommissioning Cost Estimate (PDCE)	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. The current PDP and PDCE are dated December 2024.

Guidance

There is no guidance provided for this licence condition

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

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Security Program	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 mining facility 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

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
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Security Program	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.

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.

14. PACKAGING AND TRANSPORT

Licence Condition 14.1

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

Preamble

The "packaging and transport" safety and control area covers the safe packaging and transport of nuclear substances to and from the licensed facility.

Every person who transports radioactive material, or requires it to be transported, shall act in accordance with the requirements of Transport Canada's *Transportation of Dangerous Goods Regulations* and the CNSC's *Packaging and the Transport of Nuclear Substances Regulations, 2015*.

The *Packaging and Transport of Nuclear Substances Regulations, 2015* and the *Transportation of Dangerous Goods Regulations* provides 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

Licensee Documents that Require Notification of Change

Source	Document Title	Prior Notification Required
Cameco	Mining Facility Licensing Manual	Yes
Cameco	Transportation Program	Yes

The licensee shall implement and maintain a packaging and transport program that will ensure compliance with the requirements set out in the *Transportation of Dangerous Goods Regulations* and in the *Packaging and Transport of Nuclear Substances Regulations, 2015.*

Guidance

There is no guidance provided for this licence condition.

15. FACILITY SPECIFIC

There are no facility-specific licence conditions.

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).

Change Request Form

1. GENERAL INFORMATION			
File Plan #		**e-Doc #(s) for Change Request Form**	
Licensee	**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

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.)

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
- Cameco Corporation

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 B LICENSEE DOCUMENTS THAT REQUIRE NOTIFICATION OF CHANGE

Document Title
Mining Facility Licensing Manual
Mining Facility Description Manual
Maintenance Program
Mining Operations Program
Process Operations Program
Environmental Management Program
Waste Management Program
Radiation Protection Program
Safety and Health Management Program
Security Program
Emergency Preparedness and Response Program
Quality Management Program
Training Development Program
Public Information Program
Transportation Program
Fire Protection Program
Preliminary Decommissioning Plan and Cost Estimate
BNS Letter of Credit OSB67120GWS(Amendment no. 2), CAD $30,973,080.00
CIBC Letter of Credit SBGT753911, CAD $10,755,375.00
LMIC Security Bond BDTO-860159-020 (Surety Bond Rider No. 2), CAD $30,946,545.00
SMBC Letter of Credit CB/LG/16-006 (amended), CAD $3,825,000.00

APPENDIX C LIST OF DOCUMENTS USED AS GUIDANCE OR COMPLIANCE VERIFICATION CRITERIA

Document	Document Title	Document Number
Canadian Dam Association	Canadian Dam Association, Canadian Dam Safety Guidelines	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 Factors	REGDOC-2.2.1
CNSC	Safety Analysis for Class 1B Nuclear Facilities	REGDOC-2.4.4
CNSC	General Design Considerations: Human Factors	REGDOC-2.5.1
CNSC	Dosimetry, Volume I: Ascertaining Occupational Dose	REGDOC-2.7.2
CNSC	Dosimetry, Volume I: Ascertaining Occupational Dose	REGDOC-2.7.2
CNSC	Personnel Training, Version 2	REGDOC-2.2.2
CNSC	Nuclear Emergency Preparedness and Response, Version 2	REGDOC-2.10.1
CNSC	Decommissioning	REGDOC-2.11.2
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	Design of Uranium Mines and Mills: Ventilation Systems	REGDOC-2.5.4
CNSC	Conventional Health and Safety	REGDOC-2.8.1
CNSC	Environmental Protection: Environmental Principles, Assessments and Protection Measures, version 1.2	REGDOC-2.9.1
CNSC	Waste Management, Volume II: Management of Uranium Mine Waste Rock and Mill Tailings	REGDOC-2.11.1
CNSC	Security of Nuclear Substances: Sealed Sources and Category 1, II and II Nuclear Material, Version 2.1	REGDOC-2.12.3

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	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 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	Selection, use and care of respirators	Z94.4-11
CSA Group	Environmental Management Systems – Requirements with Guidance for Use	ISO 14001:2015
NRC	National Building Code of Canada	N/A
NRC	National Fire Code of Canada	N/A
CSA Group	Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances	N393:13

Note: For CNSC documents, the most recent version of a referenced document shall be implemented following review and agreement between Cameco and the Canadian Nuclear Safety Commission.

APPENDIX C