



26-H105.A - CNSC Staff Submission

Commission Request for Information Regarding a Hearing in Writing

Classification	UNCLASSIFIED
Type of CMD	Supplemental
CMD Number	26-H105.A
Reference CMD(s)	CMD-H105-Q, CMD-H105, CMD H105.1, CMD H105.2, CMD H105.3, CMD H105.4, CMD H105.5, CMD H105.6, CMD H105.7, CMD H105.8
Hearing in Writing OR Closed Hearing in Writing date	September 2026
Summary	In this CMD, CNSC staff will provide responses in writing to questions from the Commission (26-H105-Q) [1] with respect to the hearing in writing CMD-H105 [2] concerning the request from Orano Canada Inc. to Renew the CNSC Licence for Orano's McClean Lake Operation for a 2-Year Term. As part of a Commission Proceeding, this document – including any items mentioned in the footnotes – will be part of the public record unless the Commission rules in favour of a request for confidentiality.
Actions required	There are no actions requested of the Commission. This CMD 26-H105.A is for information only.

Questions from the Commission directed to CNSC staff, as well as staff responses, can be found in the [Staff Response](#) section.



26-H105.A – Mémoire du personnel de la CCSN

Demande de renseignements de la Commission concernant une audience par écrit

Classification	NON CLASSIFIÉ
Type de CMD	Supplémentaire
Numéro du CMD	26-H105.A
CMD de référence	CMD-H105-Q, CMD-H105, CMD H105.1, CMD H105.2, CMD H105.3, CMD H105.4, CMD H105.5, CMD H105.6, CMD H105.7, CMD H105.8
Date de l'audience par écrit OU de l'audience à huis clos par écrit	Septembre 2026
Sommaire	Dans le présent CMD, le personnel de la CCSN répond aux questions de la Commission (26-H105-Q) [1] concernant l'audience par écrit CMD-H105 [2] portant sur la demande d'Orano Canada Inc. qui souhaite renouveler son permis de la CCSN visant l'établissement de McClean Lake pour une période de 2 ans. Dans le cadre d'une séance de la Commission, le présent document, y compris tous les éléments mentionnés dans les notes de bas de page, fera partie du dossier public, à moins que la Commission ne se prononce en faveur d'une demande de protection de renseignements confidentiels.
Mesures requises	Aucune mesure n'est requise de la Commission. Ce CMD 26-H105.A est fourni à titre d'information seulement.

Les questions de la Commission à l'intention du personnel de la CCSN, ainsi que les réponses du personnel, se trouvent dans la section [Réponse du personnel](#).



CMD 26-H105.A

CNSC Response to Commission Request for Information – CMD-H105-Q

Signed by:

2026-10-20

X *Nancy Greencorn*

Signed by: Greencorn, Nancy

Nancy Greencorn *on behalf of* Karen Owen-Whitred
Director General, DNCFR



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CNSC Staff Response

The Commission's questions, including any quoted text from the original CMD, have been reproduced below in the shaded boxes to provide suitable context for CNSC staff's responses. To facilitate staff responses, clarifying text or annotations may be added if the question has been broken down into multiple parts.

#1	Impacts of climate change may affect a multitude of conditions (e.g., stability of tailings impoundments, wildfire, changes in precipitation, etc.) at the McClean Lake Operation. What steps is CNSC staff taking to consider and prepare for these impacts in its regulatory oversight?
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CNSC staff's regulatory oversight ensures that external hazards, including climate-change hazards, are appropriately considered and managed. As a condition of its licence, Orano is required to implement and maintain processes to identify, assess, eliminate, or control health, safety and environmental risks associated with existing and new activities, as well as changes to work procedures, equipment, organizational structure, staffing, products, services and suppliers.

Orano maintains a hazard register that identifies facility hazards, associated risks, and mitigation measures. The register is reviewed and updated, as appropriate, to reflect new projects, significant changes or modifications, and non-routine activities. Before implementing any significant change or modification to the facility, its operations, or the safety and control measures described in the licensing basis, Orano must submit an assessment to the CNSC for review. These assessments identify and evaluate potential risks and impacts, describe mitigation measures, and demonstrate alignment with the objectives and requirements of the licensing basis.

Through inspections, desktop reviews, and assessments of relevant environmental monitoring and operational records, CNSC staff verify that risks associated with external hazards, including changing climate conditions, continue to be appropriately managed. Additional information on how the CNSC assesses the impacts of climate change on nuclear safety in Canada can be found on the CNSC [website](#).

Environmental risk assessments (ERA) are updated on a periodic basis in accordance with REGDOC 2.9.1 *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, and CSA N288.6 *Environmental risk assessment at Class 1 nuclear facilities and uranium mines and mills*. These updates consider changes in environmental conditions, advances in scientific understanding, and current climate data representative of prevailing meteorological data.

CNSC staff support the continued integration of climate change considerations into regulatory oversight by maintaining expertise in climate change science through

literature reviews, professional development activities and participation in relevant workshops and conferences. CNSC staff are also represented on committees for several CSA standards and work to make sure the standards remain fit for purpose and that climate change considerations are appropriately reflected in their requirements and guidance.

#2	On page 74 of 210 of CMD 26-H105, Orano had committed to implementing REGDOC-2.9.2: Environmental Protection: Controlling Releases to the Environment by Q3 2026. What is the status of Orano's implementation of REGDOC-2.9.2?
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On September 29, 2026, Orano Canada Inc. (Orano) submitted the *Development of Proposed Release Limits for McClean Lake Operation* report in accordance with [REGDOC-2.9.2: Environmental Protection: Controlling Releases to the Environment](#).

As requested by CNSC staff, Orano applied the methodology outlined in Section 5.1 of REGDOC-2.9.2 to develop proposed release limits (PRLs) for the McLean Lake Operation (MLO). The report documents the assessment undertaken to assess the need for PRLs and to establish the proposed limits.

Consistent with REGDOC-2.9.2, the PRLs are subject to CNSC review and approval. CNSC staff are currently reviewing the submission to verify that the methodology has been applied appropriately and that the proposed limits are protective of the environment. Upon CNSC acceptance of the PRLs, Orano will incorporate the accepted limits into the Environmental Code of Practice (ECOP) and will be compliant to REGDOC-2.9.2.

#3	On page 61 of 210 of CMD 26-H105, it is noted that CNSC staff "will" determine whether conclusions made regarding risks to ecological and human receptors have remained unchanged since Orano's previous 2016 ERA submission. Advise on whether the ecological risks have changed since the 2016 ERA.
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The overall conclusions of Orano's *2025 Environmental Protection Technical Information Document Volume 2*, which includes the updated ERA, is that the predicted ecological and human health risks associated with releases to air and effluent from the MLO remain well controlled and are generally consistent with the findings of previous environmental assessments and ERAs.

As noted in CNSC staff's CMD 26-H105, CNSC staff completed their technical review of Orano's 2025 ERA in April 2026 and provided comments to Orano. Orano is currently addressing the technical comments identified during the review.

In their review, CNSC staff assessed whether the ERA sufficiently met the requirements and guiding principles of CSA N288.6, *Environmental Risk Assessments at Nuclear Facilities and Uranium Mines and Mills* and REGDOC 2.9.1. The review considered whether Orano had adequately assessed all relevant exposures and potential effects to non-human biota and the environment due to contaminant of potential concern releases from the current and future planned activities at the MLO.

Overall, CNSC staff found that further refinements are required to support certain aspects of the ERA and to strengthen the basis for some of the conclusions presented. Notwithstanding these observations, CNSC staff determined that Orano has implemented, and will continue to maintain, effective environmental protection measures to adequately protect the environment and the health and safety of persons.

Should CNSC staff's review of Orano's responses result in revised conclusions, including the identification of increased risk, Orano would be required to address these outcomes through additional assessments, mitigation measures and monitoring and/or adaptive management, as necessary, to maintain compliance with REGDOC 2.9.1.

#4	In CMD 26-H105.5 , pages 10-11 of 11, Métis Nation - Saskatchewan (MN-S) expresses the view that the proposed 2-year licence renewal would effectively cap consultation efforts by Orano. What are CNSC staff's views on this supposition?
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CNSC staff's position is that the 2-year licence renewal, based on the current operations licensing basis, does not limit or preclude ongoing consultation and engagement activities.

CNSC staff expect that Orano and MN-S engage in good faith efforts to discuss and address the issues and concerns raised by MN-S through the lifecycle of the MLO. In addition, Orano has consistently indicated to the CNSC that the requested 2-year licence renewal is intended to provide time to undertake consultation and engagement in support of the future application for a longer licence term, including the proposed new licensed activities related to the development of the Midwest and Sue F mining projects.

Orano has indicated that it plans to submit its licence application for a longer licence term in 2027. Prior to, and following that submission, Orano and CNSC staff will continue to conduct consultation and engagement activities, as appropriate, with MN-S and other Indigenous Nations and communities.

CNSC staff have already begun early engagement with Indigenous Nations and communities regarding the proposed Sue F and Midwest mining projects. Once the application is submitted and the proposed activities are confirmed, CNSC staff will undertake targeted consultation and engagement activities with potentially impacted and interested Nations and communities.

#5	What efforts are being undertaken to engage with MN-S? How are the concerns that they have raised been handled?
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As part of the licence renewal process, CNSC staff sent out notification letters to Indigenous Nations and communities, including MN-S, based on their rights and interests in the licence application and ongoing operations at the MLO. CNSC staff encouraged Indigenous Nations and communities to raise and discuss any issues and concerns related to the MLO licence renewal with the CNSC. In addition, correspondence was provided to Nations and communities outlining the application process for the Participant Funding Program funding opportunity to support engagement and participation in the licence application review and Commission hearing process, as well as the deadline for submission of interventions to the Commission Registry.

Prior to receiving MN-S's written intervention, MN-S did not raise any specific concerns or questions regarding the licence application and did not engage with the CNSC following CNSC staff's request to meet and discuss the licence application.

In September, MN-S was invited and attended the annual CNSC-coordinated Uranium Mines and Mills oversight engagement event in Saskatoon where updates on the performance of all operating uranium mines and mills, including MLO, were provided with the opportunity to raise issues and ask questions of CNSC staff.

The concerns raised by MN-S in their intervention will be tracked and followed up on by CNSC staff through the current and upcoming licensing term and CNSC's ongoing relationship and engagement with MN-S.

#6	In CMD 26-H105.5 , page 8 of 11, MN-S expresses concerns about transportation incidents, including those that involve slurry totes. For the record, have such incidents resulted in an impact on the environment, especially concerning sensitive ecosystems and associated biota, and people?
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CNSC licensees are required to have a transport program that includes all aspects of transportation of nuclear substances, from package loading to transport and then package unloading.

At Orano's MLO, ore slurry is transported in Type IP-2 industrial packages, designed with a funnel shaped top for loading and unloading the package contents. These packages are designed to withstand normal transport conditions, preventing loss or dispersal of radioactive contents and limiting external dose rate increases during transport.

The transport-related events reported in [CMD 26-H105.5](#) involved non-fixed surface contamination detected on emptied ore slurry totes at levels slightly exceeding the regulatory limit of 4.0 Bq/cm² for the transport of radioactive material, as set out in section 35(f) of the [Packaging and Transport of Nuclear Substances Regulations, 2015](#).

Orano confirmed that there was no reported release to the environment associated with these events and there was no impact on people, sensitive ecosystems, or associated biota. CNSC staff reviewed the events and verified that Orano identified the contributing causes, implemented appropriate corrective actions, and took measures to prevent recurrence. As a result, CNSC staff are satisfied that the events were appropriately managed and that the effectiveness of Orano's transportation program has been maintained.

#7	Provide CNSC's response to the study presented in CMD 26-H105.4 from Ya'thi Néné Lands and Resources Office (YNLR), which draws on multiple data sets. The response must include environmental monitoring and impact assessment, as well as Indigenous engagement perspectives. Provide CNSC staff's views on YNLR's 8 recommendations, for the purpose of this application.
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CNSC staff note that YNLR's recommendations #2, 3, 4 and 5 focus on collaborative efforts for future MLO projects, including the proposed Orano Sue F and Midwest projects. These projects are out of scope of the current 2-year licence renewal that is based on the existing operating licensing basis. CNSC staff understand that it is Orano's intension to include these projects in a future licence application seeking a longer licence term.

The YNLR have recommended meaningful Indigenous involvement in the design of monitoring programs, the identification of culturally and ecologically important indicators, the review and interpretation of data, the consideration of adaptive-management measures, and the evaluation of restoration priorities. To this regard, CNSC staff offer the following observations concerning recommendations 6 and 7 related to the consideration of Indigenous Knowledge within Orano's environmental risk assessment (ERA).

CSA N288.6-22 provides that Indigenous communities living near a nuclear facility should be considered in the human health risk assessment (HHRA) component of an ERA for the selection of representative persons. The standard further indicates that lifestyle and traditional diet, as well as traditional hunting, fishing and food gathering activities should be considered. Annex H of CSA N288.6 also notes that site-specific surveys and

studies can support the identification of Indigenous characteristics while providing an opportunity to build stronger relationships with local Indigenous communities.

As part of their review, CNSC staff noted that Orano's HHRA included representative Indigenous receptor groups engaged in traditional land-use activities and the consumption of locally hunted, fished, and harvested foods. For many assumptions that were made in Orano's HHRA regarding the characterization of the Indigenous receptor groups, Orano made reference to regional Indigenous Knowledge studies. CNSC staff requested additional information to support the assumptions used in the assessment, including receptor characterizations (e.g., receptor locations, exposure durations, selection and intake rates of traditional foods) to demonstrate that the assessment is representative of the local First Nations and Indigenous communities. Orano is currently addressing the technical comments raised by CNSC staff as part of the review of their 2025 ERA update.

Additionally, consistent with CSA N288.6, in the ecological risk assessment (ecoRA) component of an ERA, valued ecosystem components are to be selected based on scientific information, local knowledge, and/or input from stakeholders and Indigenous communities. CNSC staff noted that Orano incorporated this in its ecoRA. For example, First Nation land users identified species consumed including lake whitefish and lake trout, walleye, northern pike, arctic grayling and sucker species. Community surveys also confirmed the importance of certain other species such as but not limited to beaver, muskrat, ptarmigan, snowshoe hare and moose.

CNSC staff also look forward to meeting with the YNLR to discuss the Light Detection and Ranging (LiDAR) study in more detail and to explore how the results can be integrated in CNSC staff's technical reviews.

CNSC staff concur with the YNLR's recommendations to support meaningful Indigenous participation in follow-up and monitoring. For example, CNSC staff will continue to engage with local Indigenous communities in the Independent Environmental Monitoring Program (IEMP).

#8	On page 6 of CMD 26-H105.2 by English River First Nation, it is stated that: "ERFN has expressed concerns regarding selenium concentrations in sediment, benthic invertebrates and fish tissue and the potential for the established aqueous environmental protection guidelines to not be as protective of the broader aquatic community as assumed. This concern is supported by Western Science, for example, selenium speciation can occur resulting in organic selenium species (e.g., selenomethionine [SeMet], methylseleninic acid [MSA] and dimethylselenoxide [DMSeO]) that are more prone to bioaccumulation than inorganic species (e.g., selenite [Se(IV)], selenate [Se(VI)])"
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	Comment on the statement concerning speciation of selenium, especially organo-selenium, and its greater potential/propensity to bioaccumulate. Is there evidence from McClean Lake Operation's monitoring that these species are present? Explain how such speciation might affect sensitive ecosystems and human health.
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Orano's 2016 ERA predicted that the milling of Cigar Lake ore could result in increased selenium loading to the environment. This was primarily due to high forecasted selenium concentrations in the Cigar Lake ore.

Following the direction of CNSC staff, Orano has been in a phase of Adaptive Management since that time. This means that Orano has been taking actions to reduce selenium in effluent. Some actions Orano has taken include implementing process optimization techniques in their JEB water treatment plant to reduce selenium and upgrading their JEB water treatment plant by installing a ferrous sulphate treatment process designed to remove selenium.

As part of the increased regulatory oversight of selenium at McClean Lake, every quarter Orano provides the CNSC with data on selenium concentrations and loadings released to the environment, the short-term continuous improvement measures to reduce selenium in effluent, and the status of the implementation of the ferrous sulphate treatment process. CNSC staff review selenium in effluent data every quarter and confirm that the releases are below the Environmentally Based Reference Level of 112 g/day, which is prescribed in Orano's Selenium Adaptive Management Plan, and that selenium concentrations at the closest downstream surface water station, McClean Lake East Basin, are below the selenium surface water quality guideline. CNSC staff are satisfied that selenium is well-controlled at the MLO.

Furthermore, as a conclusion to its 2025 ERA update, Orano has committed to continue addressing selenium-related risks through implementation of its the Selenium Adaptive Management Plan.

With respect to the presence of selenium in the receiving environment, CNSC staff note that the environmental behaviour of selenium is strongly influenced by its chemical form (speciation), as speciation affects its mobility, uptake at the base of the food web, transformation into organic forms, and subsequent dietary exposure pathways for fish, wildlife, and humans. As a result, the characteristics of the receiving environment are an important factor in understanding and assessing selenium-related risks.

Currently, the monitoring program at McClean Lake does not make the distinction between selenium species. Instead, it measures total selenium in water as well as in aquatic species. Within the ERA, these concentrations are compared against benchmarks to determine if selenium concentration poses a risk. The 2025 ERA update concluded that predicted ecological and human health risks due to selenium remain

well-controlled and are generally consistent with the findings of previous environmental assessments and ERAs.

CNSC staff's review of the 2025 ERA update is ongoing. Should the ERA determine the risk remains the same, no further action would be typically required. However, should the ERA determine an increased risk, this would trigger additional scrutiny, such as consideration of additional mitigation measures or implementation of special studies (e.g., related to selenium speciation). Continued monitoring will be required to verify the prediction that selenium risks remain localized within the Sink/Vulture Treated Effluent Management System (S/V TEMS) and that downstream receptors remain protected.

The CNSC, as a lifecycle regulator, maintains oversight on the licensee's monitoring programs and will ensure that the potential effects identified in the ERA will be appropriately addressed and managed by Orano. Specifically, CNSC staff continue to provide oversight on Orano's actions taken to reduce selenium in effluent to prevent impacts to aquatic and terrestrial receptors.

Conclusion

CNSC staff's conclusion remains unchanged and continues to support the recommendations in CMD 26-H105 that Orano is qualified to carry on the licensed activities. CNSC staff are satisfied that, Orano will make adequate provision for the protection of the environment, the health and safety of persons, and the maintenance of national security and measures required to implement Canada's international obligations.

References

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

- [1] Commission Panel Questions CMD, “Commission Request for Information Regarding a Hearing in Writing (CMD-Q) In the matter of Orano Canada Inc. Application to renew the McClean Lake Operating Licence for 2-year term” CMD 26-H105-Q, September 2026 (Document ID: [QQQVZZNDK725-166150894-15604](#)).
- [2] CNSC staff CMD, “CNSC Staff Submission to renew the McClean Lake Operating Licence for 2-year term”, CMD 26-H105, June 30, 2026 (Document ID: [QQQVZZNDK725-166150894-13383](#)).