Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 26-M3.9
CMD 26-M4.5
CMD 26-M5.13
CMD 26-M6.5
CMD 26-M7.4

Date: 2026-01-28

Written Submission from the Curve Lake First Nation

In the matter of the

Regulatory Oversight Report for Uranium Mines and Mills in Canada: 2024

Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2024

Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2024

Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2024

Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2024

Commission Meeting

March 2026

Mémoire de la Première Nation de Curve Lake

À l'égard du

Rapport de surveillance réglementaire des mines et usines de concentration d'uranium au Canada : 2024

Rapport de surveillance réglementaire des sites des Laboratoires Nucléaires Canadiens : 2024

Rapport de surveillance réglementaire des sites de centrales nucléaires au Canada : 2024

Rapport de surveillance réglementaire sur l'utilisation des substances nucléaires au Canada : 2024

Rapport de surveillance réglementaire des installations de traitement de l'uranium et des substances nucléaires au Canada : 2024

Réunion de la Commission

Mars 2026

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January 28, 2026
(Submitted by Email)

RE: Curve Lake First Nation's review of the five Regulatory Oversight Reports for the 2024 calendar year

Dear Registrar,

On behalf of the Consultation Department at Curve Lake First Nation (CLFN), we bring good thoughts to Commission members and staff at the Canadian Nuclear Safety Commission (CNSC). We are providing this written submission in response to the five Regulatory Oversight Reports for the 2024 calendar year.

Our approach is to work collaboratively with proponents and regulators within their existing journeys and constraints, pursuing incremental change that nudges systems forward rather than dismantling them or holding rigid positions. We aim to lift people up on all sides, remaining mindful of both Indigenous and non-Indigenous partners across the table, and recognizing the significant effort required to shift systems, culture, and perceptions—often relying on their people's internal advocacy to drive change. At the same time, we act with care and integrity with our goal to transform consultation and accommodation into processes that are more meaningful and beneficial for Curve Lake First Nation. This ensures that everything we do advances our core objectives: our responsibility for protecting Rights and Mother Earth, creating sustainable succession, developing economic sovereignty, and fostering cultural identity. Curve Lake culture and values will always be the guiding light to achieve these core objectives.

Our Consultation Department has emphasized that environmental protection and sustainability is an integral component of the future of the Curve Lake First Nation. Working with Curve Lake to develop project concept, design, planning, assessment, potential and actual impacts,

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monitoring, etc. are necessary steps in our process. All plans and activities must be viewed through the lens of environmental protection and sustainability. These requirements ensure that Curve Lake First Nation's interests and Rights are being protected within our territory; that we are able to protect the ability to exercise our Rights as a people – physically, culturally, and spiritually; that we are able to foster sovereignty, cultural identity, and sustainable succession. This is central to all relationships being progressed with various regulators and proponents.

Curve Lake First Nation is the steward and caretaker of the lands and waters within our territory in perpetuity, as we have been for thousands of years, and we have an obligation to continue to steadfastly maintain this responsibility to ensure their health and integrity for generations to come. Protection, conservation, and sustainable collaborative management are priorities for Curve Lake First Nation.

Curve Lake's vision statement must be central to development in the territory: "Upon the foundation of community values and vision that promotes and preserves our relationship with mother earth, which has defined and will continue to define our identity and culture as Anishnaabe People, the Consultation Department will build and secure the framework for our First Nation lands by putting into place ways and laws that will provide both the protection and the freedom for each person, their family, and the whole community to fulfill their potential. Each way and law will be given the consideration to its importance for our next seven generations."

We would like to acknowledge CNSC staff in their dialogue and work with our Consultation Department since 2020 until present. There are many topics and projects that have been covered; as everyone can appreciate, meaningfully consulting on and addressing each topic or project takes time, commitment, and focus. As demonstrated in 2021-2025, we continue to be optimistic that our Terms of Reference, Work Plan, and CNSC's Indigenous and Stakeholder Capacity Fund will result in progress and improvements in 2026 and beyond.

Our consultation team has taken the time to review:

- CMD 26-M3 – CNSC Staff Submission – Regulatory Oversight Report for Uranium Mines and Mills in Canada: 2024
- CMD 26-M4 – CNSC Staff Submission – Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2024
- CMD 26-M5 – CNSC Staff Submission – Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2024

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- CMD 26-M6 – CNSC Staff Submission – Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2024
- CMD 26-M7 – CNSC Staff Submission – Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2024

The **summary of our key themes** consists of:

- Incorporation of Indigenous Knowledge in regulatory processes
- Strengthen language around Indigenous engagement
- Transparency in consultation determinations
- Distinguishing Treaty First Nations vs. interested First Nations
- Advancing collaborative, two-way Indigenous engagement in sampling
- Provide more context for culturally significant sampling activities
- Defining technical terms for clarity
- Increase transparency in compliance review processes
- Access and use of CNSC communication materials
- Inclusion of subject matter experts (SMEs) when requested
- Enforcement actions & consequences for non-compliance
- Explaining action level (AL) exceedances & offsetting
- Need for deeper rationale on risk reclassification
- Transparency on EA applicability & differing perspectives
- Clarifying pressure tube research & implications for long term operations
- Transparency on overdue inspections & resource constraints

The content of **Appendix A** and **Appendix B** is being shared in raw format for CNSC to gain insight into the processing of information by staff. **Appendix A** is more discussion based and has internal dialogue-based content. **Appendix A** was reviewed from the lens of CLFN consultation staff who ultimately have a responsibility to communicate with leadership and to community members. Staff kept in mind what leadership and community member questions would come up naturally. Therefore, the approach of the review is one that asked for clarity and seeks to have a better understanding of how things work in the regulatory framework so that frequently asked questions by leadership and community members could be addressed in future interactions with CNSC staff and with nuclear proponents. **Appendix B** is a summary briefing of what was gleaned from the reports and communicated factually without judgement or taking a position.

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We do this work to uphold our responsibilities to care for the earth and waters, for our people, our nation, and for all our relations. Our foundational belief is balance; our values and principles are built upon the respect, care, and nurturing of all life as part of an interconnected whole and necessary for the balance and harmony required for Mino-Bimaadiziwin now and for future generations.

Sincerely,

On behalf of The Curve Lake First Nation Consultation Department

Francis Chua
Support to Curve Lake First Nation

cc:

- Chief Laurie Hockaday, Curve Lake First Nation
- Delaney Jacobs, Director of Lands, Environment & Consultation, Curve Lake First Nation
- Paige Williams, Manager of Consultation, Curve Lake First Nation
- Lily Boggs, Energy Lead, Curve Lake First Nation
- Kayla Wright, Support to Curve Lake First Nation

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Appendix A:

Regulatory Oversight Report: Review

Canadian Nuclear Power Generating Sites 2024

- (Page 12 PDF) Is there a way Curve Lake could get permission to use the infographic for community meetings or committee discussions? Such as by printing it out or creating hand out fliers that include the graph. CNSC giving permission to use the material would be beneficial since it's easy to understand and the staff at Curve Lake would be able to give the added context for the facilities within Treaty Territory (e.g. explaining what safe storage means).
- (Page 13-14 PDF) "*In January 2024, a Commission hearing was held to determine the applicability of the DNNP EA to the BWRX 300 reactor. In April of that year, the Commission released its Record of Decision, confirming that the BWRX-300 reactor was bounded by the EA*."
    - One of the key things that was discussed at the hearing was how a 2012 EA was not applicable to 2024 and onwards. There was a desire from the Nations for a new EA to be conducted for the site, but that was found by the commission to be unnecessary. Briefly mentioning this opposition or having some sort of justification would enhance this section and help with transparency because that was a key point from the hearing. Even an embedded link to the decision itself and justification would help. Given how fast the environment has changed especially with climate change, I can see this being a question or concern from the Consultation Committee/Community.
- (Page 13-14 PDF) "*In January 2025, the Commission held Part 2 of the hearing on OPG's application for a licence to construct, taking into consideration interventions submitted by Indigenous Nations and communities, the public, and stakeholders*."
    - Add in the differentiation between Treaty First Nations and Interested First Nations. While CNSC has been engaging with many First Nation groups, there is a legal distinction for those with Treaty Rights.
- (Page 13-14 PDF)"*The Commission further concluded that it had fulfilled its constitutional responsibility to consult and, where appropriate, accommodate Indigenous rights in respect of its decision on this matter*."
    - The commission should not be responsible for auditing themselves on First Nation consultation. If there is a want to be transparent, maybe add in whether the various First Nations agree with that statement or not. Especially since they have been wrong before (e.g. the Kebaowek decision). This is a topic of contention in many

interventions for CNSC licensing and such. Having this recognized as something that will be worked on/addressed would benefit First Nations with self determination and affirm sovereignty. (e.g. deciding for themselves if the CNSC has fulfilled the DTC)

- (Page 28) "*The finding of medium safety significance was related to procurement activities not following OPG's established processes. In response, CNSC staff issued a warning letter to formally notify OPG of these non-compliances and to emphasize that further deficiencies in this area may lead to escalated enforcement actions*."
    - In various meetings I know the topic of "what happens if they don't comply? What can you do?" comes up in reference to proponents and proponent activities. This is an example we can look at to further understand the CNSC process. Beyond a formal letter there were also additional inspections and oversight as OPG took corrective action. Is there a possibility to discuss this specific event or others where escalated enforcement occurred? It would help with clarity to delve more into specific actions and the role CNSC has in relation to enforcement because that is a concern the Nations have had previously and will likely come up again.
- (Page 30 PDF) In 2024 DNGS had 1 trip, 1 setback, and 1 step back.
    - In this section, there is no explanation of what those terms refer to, so maybe having them explained very briefly would be helpful. If it helps with word flow in the document, an index in the ROR to help with these sorts of terms could be added in the future as well. Briefly describing what the event is and why it's important.
- (Page 36 - 37 PDF) *In January there was 1 Action Level (AL) exceedance for tritium. The weekly allowance for elemental tritium is 1,030 Ci/week and during the reporting week ending January 29th the exceedance was 1,246 Ci/week. It was due to maintenance work on the tritium removal facility stack where emissions were not adequately planned for. As a result, OPG has formalized a process for Temporary AL regulatory exemptions which include notifying CNSC Staff.*
    - If they are going over weekly allowances, even temporarily, is there a plan to offset? Maybe lowering emission limits elsewhere, so it balances out? I would just like to see the justification around surpassing Action Levels and how that factors into the Derived Release Limits (DRL). While there may not be a serious risk to health in bypassing limits, there is still added pollution being released that is listed under the regulation. Further discussion to explain why or why not offsetting is used in these cases would be beneficial.

- (Page 54 - 55 PDF) *CNSC staff reviewed both the March and September 2024 elevated Heq Research and Development (R&D) updates for Pickering Units 5-8 pressure tubes in extended operation and conclude that they continue to adequately target the key issues raised by CNSC staff regarding pressure tube fitness for service evaluations*."
    - When they say research and development, are they researching how the pressure tubes are responding to the extended life expectancy? If so, why? If this research is looking at expanding life expectancy for pressure tubes that could lead to changes in how long a nuclear plant can operate before they require refurbishment. This could be applicable to DNNP or Wesleyville in the future but also lead to changes in legislation and permitting (e.g. less frequent hearings for PROL) which are important processes for the Nations to check in with a facility and its operations. Since there has been a license awarded recently that is the longest of its kind in Canada, this sort of R&D is important for the Nations to have knowledge of (even if it's the bare minimum). What key issues are the CNSC Staff raising in relation to the pressure tube's fitness for service?
- (Page 135 - 136 PDF) *"Incorporating and reflecting Indigenous Knowledge into the CNSC's regulatory processes as per the CNSC's Indigenous Knowledge Policy Framework*."
    - This part made me think of the Wesleyville IPD as an example of how this can work in a tangible way. It's a good place to start, and now we can look at other CNSC documents and processes that would benefit from adding the CLFN voice as well as the voices of the other Nations.
- (Page 137 PDF) "*Other relevant parties, including CNSC subject matter experts, proponents, licensees, and other federal departments, were brought in to support discussions and explore matters of interest in greater detail, as required*"
    - This is also really appreciated as well, especially as First Nations start to hire more staff and expand consultation departments. Ensuring everyone has time to ask questions and understand the same material is really important for understanding.
    - The "as required" part is also important. Having CNSC suggest a follow up with an expert gives the Nations the opportunity to decide if the topic is worth looking into further or if the time is better spent elsewhere. With capacity constraints I prefer when CNSC (or other proponents) ask for permission to have an expert talk/teach about a topic rather than assuming.

- "*In September 2024, CNSC staff shared the DNGS EPR with HFN, CLFN and MSIFN to review and add comments to ensure it appropriately reflects any information in relation to Indigenous Knowledge as well as Indigenous and/or Treaty rights. CNSC staff updated the report based on the feedback received from MSIFN and CLFN and collaborated to include a "Views Expressed" section within the EPRR*"
    - Is this considered standard practice for CNSC reports? If so, maybe it would be worthwhile to have it written down in policy that certain reports need to be submitted for feedback (if the Nations express interest) as a formal way to show collaboration efforts/reconciliation. By having the Nations unedited words in a "views expressed" section, it helps with ensuring they are kept whole rather than summarized. Following a rule vs following a professional courtesy. CNSC is developing a workplan to help with UNDRIP/ Implement UNDA, so smaller actions like this could help work towards that goal while the larger plans are being created.
    - Tying into the topic above, (page 142 PDF), This section had a paragraph from various First Nations that described how they felt the relationship was going. This is super beneficial as it lets Nations speak in their own words rather than having CNSC staff write a summary. It does put more onus on the Nations to be involved in the process but with adequate capacity support, it's definitely worth it.

<u>Canadian Nuclear Laboratory Sites 2024</u>

- (Page 78-79 PDF) "*CNSC staff invited each interested Nation and community to provide and share Indigenous Knowledge, as well as suggestions for species of interest, valued components, and potential sampling locations where traditional practices and activities may take place.*"
    - This new approach to sampling campaigns is a step in the right direction. Looking for collaboration on the process rather than just having the Nations observe, will result in better data collected (including choice of what species are being sampled). It's enhanced by other supplementary activities like the CNSC lab tour we attended in 2025. Looking for more opportunities to incorporate First Nations in the process and to enhance learning from both Western and Indigenous perspectives is a good goal to work on.
- (Page 81-82 PDF) CNL created a Sustainability report for 2024 as part of their work to help disclose what work they're doing to improve the impact facility operations have. I think this is a great addition and felt the report was very thorough. There was also a summary report paired along with the

extensive one. This sort of thing is really good for gathering an overview of how the year went, and could help with community engagement or answering questions that arise. This could be something that other proponents utilize and repurpose for their own needs.

Uranium Mines and Mills 2024

- (Page 13 PDF) "*Inspections are more efficient in using time on-site. Prior to COVID, hardcopy documents were reviewed on-site during the inspection. During the COVID years, CNSC staff transitioned to requesting electronic documentation in advance of an inspection, which allows reviews to be carried out before the start of the inspection. This practice has continued since the ending of COVID restrictions, and allows for more thorough document reviews, and more focused use of time on site*"
    - Was this only implemented for Uranium mines/mills or is this practiced across various CNSC regulated facilities? It would be interesting to see what changes were made in response to covid and what lasting effects occurred. Since I started working for Curve Lake after the pandemic, I'm not familiar with how it affected the nuclear industry. Is there anything important to keep in mind when doing report reviews that are pandemic related? (e.g. a spike in accident reports could be due to increased numbers of staff being allowed onsite compared to COVID restricted years). Are CNSC staff better equipped to handle compliance verification if another pandemic were to occur?
- (Page 72 PDF) *Provided updates on the 2023 Beaverlodge, Gunnar and Lorado IEMP results to verify that the public, Indigenous Nations and communities and the environment surrounding nuclear facilities are safe. In 2024, CNSC staff worked with Ya'thi Nene Lands and Resources (YNLR) directly, communicating results to leadership and community members, and collaborating on easy-to-read results cards that were shared with YNLR community members. This also included a joint presentation between CNSC and YNLR that was presented at the 2024 Turtle Island Indigenous Science Conference to discuss continued collaboration between the CNSC and YNLR on the IEMP*."
    - Would it be possible for CLFN and CNSC to collaborate on easy-to-read result cards for local IEMP campaigns? Since the CNSC has this as an example, maybe we could look at what they've done previously for other communities and workshop that into something for Curve Lake. Maybe we could have pamphlets available at the

harvesters gathering so people can take one home if they want to know more. Since last year was the first time the Powwow grounds were sampled as part of BWXT's soil sampling campaign, it could be included as well. Paige and I are attending a conference to discuss the Manoomin (Wild rice) sampling that was done with CNSC staff, which could be workshopped into a pamphlet as well. There are a lot of campaigns that happen yearly and on rotating years, which could be used to discuss IEMP's with the community.

The Use of Nuclear Substances in Canada 2024

- (Page 14 PDF)"*In 2024, staff performed 866 inspections (811 in-person, 35 hybrid and 20 remote). CNSC staff performed 51 more inspections in 2024 compared to 2023. The total number of inspections performed in 2024 is in line with the number of inspections performed pre-pandemic when 863 inspections were performed in 2019. Staff can confirm that progress continues towards achieving baseline inspection frequencies. The number of licensees overdue for inspection is gradually decreasing and continues to be dependent on inspector resources. While overdue inspections are prioritized, it is about balancing these with other priorities including licensees in poor performing subsectors and those performing high risk activities.*"
    - It would be good to have more information on which inspections are still overdue and how they decided to organize what areas needed inspections over others (when resources were limited). Knowing why resources are limited as well would be good to know (e.g. was it a lack of staff, lack of funding, etc). What lessons were learned from covid to mitigate issues in compliance inspections for future events (e.g. another pandemic)? People rely on the CNSC to ensure safety, so gaps in compliance inspections being felt years after the pandemic started is definitely a topic worth discussing.

- (Page 19 PDF) *"As noted in the previous section, our conservative approach to rating individual non-compliances has a disproportionate effect on the nuclear medicine sub-sector, with respect to radiation protection. The result is that the performance ratings presented in past RORs have inaccurately overstated the safety significance of non- compliances. To correct this miscommunication, CNSC staff have reviewed the risk-ranking of all line items (regulatory requirements) in the radiation protection SCA and have revised the rankings to more accurately reflect the risk. This is not about changing the goalposts, but rather about improving the accuracy of our evaluations so that they better reflect the true safety*

performance of licensees."

- Important to note that there has been a change in the way data is classified. It would be interesting to discuss with CNSC staff about the details behind these changes such as when they noticed it as an issue, if the CNSC was given feedback on this and by who (e.g. any facility mentioned in the document), etc.

- (Page 19 PDF) "*As an example, one of the items that was changed from high-risk to medium risk is the requirement for labelling containers with the radiation warning symbol. On a routine inspection of a nuclear medicine department, an inspector might see dozens of containers holding radioactive material. If even one of these containers was missing a label, or even if a label was incomplete or illegible, the citation would have caused the entire SCA to be below expectations"*
  - I appreciated the plain language example given, but I would also like to discuss this more with CNSC. The idea that containers of radioactive materials are not being scrutinized as harshly seems like it's still a safety issue. Containers with anything radioactive should be highly regulated to have legible and proper labels, so I'm struggling to understand how this all works out. Only multiple repeated infractions and serious issues will trigger a lowering of the SCA, but I feel that having the risk of lowering the SCA for even 1 mislabel would be enough incentive to ensure it's done properly.Given that this relates to radioactive materials, I would just like to see further rationale behind this decision.
- (Page 19 PDF) "*For example, if the inspector sees multiple containers unlabeled or if they deem the lack of a label to be a significant risk. Regardless of whether the citation lowers the overall SCA or not, the non-compliance is recorded in the inspection report, and the licensee is required to submit corrective measures*"
  - All non-compliance is recorded, but it would still be beneficial to know more about this new process. The differences in consequence between SCA rating, corrective measures, etc. would be a good conversation to have just for clarity. For example, what is the timeline for correction of a non- compliance (e.g. if a missing label is found during an inspection, must it be fixed in front of the inspector or do they have a few days to then reschedule a follow up?). Since this ROR is focusing on important sectors such as the medical field, I feel that having more information on the checks and consequences would be useful as this is still a newer aspect of nuclear technology and one that's less discussed than energy production. CNSC staff could have one of the inspectors walk through the inspection process during one of our regular meetings. A sort of mock

presentation that can highlight what happens when an infraction is found and how the facility is expected to respond.

Uranium and Nuclear Substance Processing Facilities in Canada 2024

- (Page 44 - 47 PDF) "*Sharing information and discussing topics of interest with Indigenous Nations and communities*"
    - For this point maybe the wording could be changed to feel less one sided (e.g. CNSC always giving information to First Nations, rather than both groups sharing information with each other). Potentially something like "Fostering relationships built on mutual knowledge sharing and discussing topics of interest" for example.
- (Page 44-47 PDF) *"During the CFM and PHCF sampling campaign, representatives from Mississaugas of Scugog Island First Nation (MSIFN) and Curve Lake First Nations joined the CNSC field team on separate days to observe the sampling. CNSC staff and MSIFN located and collected jewelweed together. CNSC staff and MSIFN also located choke cherry plants within the sampling area that could be harvested once ripe*."
    - For this section, it would be nice if they expanded more on the specific plants they mentioned. What is the significance behind sampling Jewelweed and choke cherry? Was it identified as culturally significant or a suggestion made by the Nations present? Is it going to be incorporated into future sampling campaigns?
- (Page 53 - 55 PDF) On October 23rd there was a small release of UF6 on the 3rd floor. The plant was not in operation but after the leak was addressed, there were found to be elevated levels of uranium in urine samples (still below action levels). All stack and environmental monitoring results were within range. Changes were made following an investigation, including improvements to emergency ventilation for the UF6 plant.
    - The use of the term "small" can be confusing. Is there a list or chart that explains when releases or spills are classified as "small" or "large" with number values? These sorts of terms can be hard to conceptualize especially if there is no listed quantity of how much was released. What is considered small for CNSC may not be small for Curve Lake.

Overall Suggestions for the ROR as a whole

- In sections that discuss event reporting (e.g. safety), look into having it start with a note that discusses how a high number of events does not mean the site is unsafe, just that there is a strong culture of accountability and trust.

This was noted in some reports but not others, which led to questions on the site culture around reporting. If there are low rates of reporting at a site, then mention how work is being done to improve the work culture of the facility. This way if the number of reports rise in following years, it's easy to see why (e.g. improvements to accountability).

- When Staff review compliance reports from proponents, it would be good to see the process on the regulatory side. Such as how they verify information, if field visits are paired with desk top studies, what they look for, etc. Seeing this process from the CNSC staff perspective would be a good learning experience and a chance to share perspectives from the CLFN staff as well. Is it possible to meet with those staff who do the reviews, field visits, on-site work?
- One thing I noticed is that the land acknowledgements would vary from each document, with some having a few generic sentences and others having an appendix with each listed First Nation that has been consulted along with more meaningful paragraphs. Since the activities CNSC is licensing are decade long endeavors, it's a good way for CNSC to reflect on the relationship goals they strive towards with First Nations. While it's not always possible to list each First Nation or to tie the ROR to a specific Treaty area given the spread of facilities covered, having consistency would be beneficial. The land acknowledgement should be meaningful and not feel like an obligation but rather something used to reflect on the Traditional caretakers of the land and how First Nations continue to do so today. The idea of the appendix so that each Nation is listed by name and recognized feels acceptable if the list is too long for an opening section (e.g. the ROR related to nuclear substance use). For the ROR where each Nation can be acknowledged upfront, they should continue to be. That or there can be First Nations named throughout the document when specific facilities are highlighted (e.g. Pickering Nuclear Plant listing the William's Treaty First Nations). Just a general suggestion to ensure that land acknowledgements are fulfilling their purpose in the best way they can. Some good examples from the Uranium and Nuclear processing Facilities ROR:
    - "*We also recognize that when these sites were originally constructed, Indigenous consultation and engagement did not meet today's standards.*"
    - *"We will continue to create meaningful opportunities for long-term engagement and encourage open, two-way dialogue to foster mutual understanding, even when perspectives differ."*

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Appendix B:

Appendix B:

CMD 26-M3: Regulatory Oversight Report for Uranium Mines and Mills in Canada: 2024
Section 4.9: Environmental Protection

1. Purpose of Environmental Protection at Nuclear Facilities

- The goal of the Environmental Protection Safety and Control Area (SCA) is to make sure all releases of radioactive or hazardous substances from uranium mines and mills are controlled, monitored, and minimized to protect people and the environment.
- Each facility must have an environmental program as part of its overall management system. This program is reviewed by the CNSC and forms part of the facility's license requirements.

2. Environmental Monitoring Programs

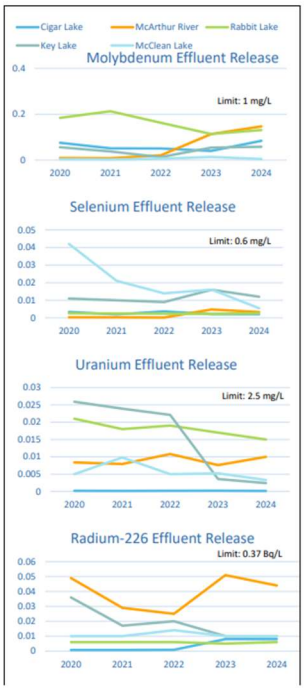
- Each facility must run an EMP. This program measures the levels of nuclear and hazardous substances in the air, water, soil, and sometimes food in surrounding areas.
- CNSC reviews these programs to make sure they comply with regulations and that the environment and people are safe.
- In 2024, all 5 operating uranium mines and mills were rated "satisfactory", meaning their programs are working effectively.

3. Environmental Management Systems (EMS)

- Facilities must have an EMS, which is a framework for organizing environmental protection activities.
- EMS includes: Annual environmental goals and targets, internal audits of programs, regular checks by CNSC to ensure objectives are met

4. Effluent and Emissions Control

- Facilities have programs to control liquid effluents and air emissions.
- They set action levels (early warning signals) and administrative levels (upper design limits).
    - Action level exceeded → triggers investigation and corrective actions.
    - Administrative level reached → triggers internal review, but not reported to CNSC.
- These levels do not necessarily indicate a risk to the environment (they are early warnings to maintain control).
- Effluents include molybdenum, selenium, uranium, arsenic, copper, lead, nickel, zinc, ammonia, total suspended solids (TSS), and pH.

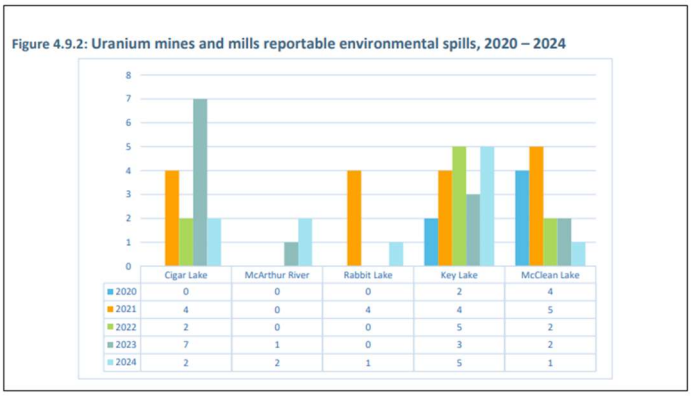


5. Environmental Risk Assessment (ERA)

- ERAs are formal studies that predict how substances released from a facility might affect humans, animals, plants, water, soil, and air.
- Based on ERAs, facilities design monitoring programs and protective measures.
- ERAs are updated every 5 years or sooner if major facility changes occur.

6. Treated Effluent and Spills

- Uranium mines and mills treat effluents to reduce contaminant levels.
- In 2024:
    - Molybdenum, selenium, uranium levels were stable and below regulatory limits.
    - All spills were low safety significance and did not affect the environment.
- Facilities must report any uncontrolled releases to CNSC and take corrective actions.



7. Air Quality and Soil Monitoring

- Facilities measure radon, particulate matter, and metals in air. Soil and vegetation are also monitored to detect any contamination from dust or emissions.
- 2024 results:
    - Radon and other air contaminants were well below safety limits.
    - Soil parameters were within natural background levels.

8. Protection of People

- Facilities use Human Health Risk Assessments (HHRA) to estimate potential exposure from air, water, soil, and traditional foods (like fish, moose, berries).
- 2024 results:
    - Exposures were well below regulatory public dose limits (1 mSv/year).
    - Facilities follow ALARA principles ("As Low As Reasonably Achievable") for radiation exposure.

9. Community and Independent Monitoring

- Eastern Athabasca Regional Monitoring Program (EARMP):
    - Monitors long-range environmental effects and safety of traditional foods in northern Saskatchewan communities.
    - Results show contaminant levels are safe and similar to the general Canadian population.
    - Involves local communities, including Indigenous participation.
- Independent Environmental Monitoring Program (IEMP):
    - CNSC collects samples near facilities to independently verify safety.
    - 2024 results at Cigar Lake: radioactive and hazardous materials were within natural background levels.

*CNSC does not sample every site every year. Instead, they follow a risk-informed schedule that spreads sampling over time to make sure each facility is checked periodically while making efficient use of resources. This explains why in 2024 the Cigar Lake Operation was chosen.

CMD 26-M4: Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2024
Section 4: Events and other matters of regulatory interest

1. Reportable Events

- This part lists events that CNL reported to the CNSC under their licences, things like operational issues, spills, equipment failures, or anything that meets the regulatory definition of a reportable event.
- The report summarises the events that occurred in 2024 but does not indicate any that compromised safety.

Facility	2024	2023	2022
Chalk River Laboratories	27*	48	39
Whiteshell Laboratories	11	15	3
Port Hope Area Initiative	8	10	17
Douglas Point WF	1	4	0
Gentilly-1 WF	0	1	0
Nuclear Power Demonstration WF	0	1	0
TOTAL	47	79	59

2. Independent Environmental Monitoring Program (IEMP)

- The IEMP part gives updates on where and how this independent monitoring was done around CNL sites in 2024.
- CNSC staff conducted independent environmental sampling near G1WF (legacy radioactive waste storage facility located at Chalk River Laboratories). Samples of air, water, soil, sediment, sand, vegetation, and food were collected for radioactivity analysis.
- The report does not indicate any environmental results from the IEMP that suggest problems.

3. Near Surface Disposal Facility (NSDF)

- In early 2024, the CNSC Commission authorized CNL to build a new near-surface disposal facility (NSDF) at Chalk River for managing low-level radioactive waste.
- Key environmental concerns CNSC is managing: Long-term containment, groundwater protection, surface water protection (Ottawa River watershed), cumulative effects.
- Before giving this approval, the Commission concluded that the NSDF would not cause significant adverse environmental effects, provided that CNL implements its proposed mitigation and environmental monitoring plans, including ongoing engagement with Indigenous Nations and nearby communities.

4 Advanced Nuclear Materials Research Centre (ANMRC)

- This part describes a new research facility project at CNL intended to support future nuclear material research.
- In April 2018, CNSC concluded that ANMRC does not require a new licence. It fits within existing licensed activities already approved for Chalk River.
- Low environmental risk. BUT it can introduce new waste streams.

- In July 2024, ANMRC was included in site-wide surveillance and monitoring. No Non-Noted Non-Compliances (NNCs) were identified in 2024.
- CNSC oversight focuses on facility design, waste handling, and containment systems

*keep an eye on → If new research activities are proposed later, licensing may need to change

5. Modern Combined Electrolysis and Catalytic Exchange Facility (MCECE)

- Another project at a CNL site that uses specialized processing technology (electrolysis and catalytic exchange). Specialized facility used to process and manage tritium, a radioactive form of hydrogen.

*Tritium behaves like water. It is difficult to completely contain

- CNSC oversight focuses on design controls, ventilation systems, effluent and emissions management. Concerns on air emissions, liquid effluents, and groundwater monitoring results.
- CNSC staff document how they're overseeing the project to ensure that all safety and regulatory requirements are being met during design, construction, and early operation.
- No new licensing issues or non-compliances were identified in 2024.
- Environmental relevance → low-dose but high-sensitivity.

6. Actinium-225 Initial Sales Project (Ac-225 ISP)

- Ac-225 is a radioisotope used in medical applications (e.g., some cancer therapies). This project supports the production and sale.
- Activities are regulated under existing licences.
- CNSC oversight focuses on material handling, waste management, radiation protection
- Environmental releases are expected to be **very low.**

7. Land Lease for Commercial Project Development

- CNL has leased some land for commercial development related to nuclear technologies. CNL remains responsible for compliance
- This is a governance and accountability issue, not a direct emissions issue. Ensuring environmental responsibility does not become unclear when multiple parties operate on the same licensed site.

8. Gentilly-1 Fuel Transfer Project

- Gentilly-1 is a shutdown nuclear reactor undergoing long-term decommissioning. This project involved transferring nuclear fuel or materials as part of waste management (Quebec).
- This section summarizes a specific project to transfer fuel or materials safely as part of ongoing decommissioning and waste management work. → Fuel transfers pose short-term, higher-consequence risks.
- No environmental impacts were identified in 2024.

9. Unique Integrated Test Facility (UNITY-2)

- UNITY-2 is a test facility for advanced nuclear systems and materials. It supports innovation and experimental work rather than routine operations.
- Activities remain within the existing licensing basis.

CMD 26-M7: Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2024
Section 2, 3 and 7.

1. Cameco - Blind River Refinery (BRR)

- What the facility does: Takes uranium concentrate (yellowcake) and refines it into uranium trioxide (UO3). Ships UO3 to Port Hope for further processing
- Location: Near Blind River, Ontario. Close to Mississauga First Nation. In treaty and traditional Indigenous territories
- CNSC oversight in 2024: 5 inspections, covered 11 Safety and Control Areas (SCAs), 21 Notices of Non-Compliance (NNCs) identified
- CNSC concluded: the facility operated safely and within its licence
- Environmental review takeaway
  - Refining is chemically intensive but well-established
  - Oversight frequency suggests routine regulatory attention, not elevated concern

2. Cameco - Port Hope Conversion Facility (PHCF)

- What the facility does: Converts UO3 into Uranium dioxide (UO2) → CANDU fuel and Uranium hexafluoride (UF6) → exported for further processing
- Location: Port Hope
- CNSC oversight in 2024: 6 inspections, 10 SCAs, 17 NNCs
- Additional oversight tied to the Vision in Motion (VIM) cleanup project
- Key conclusion CNSC satisfied PHCF operated safely and within its licence
- Financial Guarantee (PHCF) 2024 outcome: CNSC Commission accepted Cameco's revised financial guarantee. Confirms funding is considered sufficient
- Vision in Motion (VIM) Project (major cleanup and site renewal project) builds on the Port Hope Area Initiative (PHAI). Moves historic and decommissioning waste to the Long-Term Waste Management Facility (LTWMF). What happened in 2024 → Large-scale remediation work.

3. Cameco Fuel Manufacturing Inc. (CFM)

- Makes fuel pellets from UO2, assembles nuclear fuel bundles, supplies Canadian reactors
- CNSC oversight in 2024: 4 inspections, 10 SCAs, 16 NNCs
- Conclusion: CNSC satisfied CFM operated safely and within its licence

4. BWXT Nuclear Energy Canada Inc. (Toronto and Peterborough)

- Toronto: manufactures uranium pellets
- Peterborough: assembles fuel bundles and provides nuclear services
- CNSC oversight in 2024: 4 inspections total (2 per site), covered 4 SCAs + public information, 8 NNCs
- Conclusion: CNSC satisfied both facilities operated safely
- Financial Guarantee (BWXT NEC): Updated preliminary decommissioning plan. CNSC Commission accepted revised guarantees in April 2024. Confirms long-term cleanup funding is secured

5. BWXT Medical Ltd.

- Processes radioisotopes (e.g., yttrium-90, indium-111). Used in medical diagnostics and treatment
- 2024 oversight: 3 inspections, 3 SCAs, 8 NNCs
- Conclusion: CNSC satisfied facility operated safely

6. Reportable Events

- Several reportable events occurred across uranium and nuclear substance processing facilities in 2024.
- Events were reviewed by CNSC staff to confirm: proper notification, appropriate corrective actions, no unacceptable impact to workers, the public, or the environment.
- No event resulted in offsite radiological or environmental consequences.
- All events were assessed as low safety significance after review.
- A workplace injury at PHCF met CNSC reporting threshold. CNSC concluded Cameco responded appropriately
- BTL was subject to heightened regulatory attention in 2024. Below Expectations (BE) ratings in Emergency Management and Fire Protection and security. + Inadequate financial guarantee for decommissioning. **Designated Officer's Order** issued regarding the financial guarantee. Increased CNSC oversight and follow-up.
- CNSC conducted **independent environmental sampling** near selected processing facilities in 2024.
- Environmental Protection Review Activities:
    - Reviews: CNSC staff examined environmental protection programs, environmental monitoring data, and compliance reports submitted by licensees.
    - Focus Areas: Effluent and emissions control, monitoring program adequacy, and trend analysis.
    - Findings: Environmental protection programs were effective, releases remained within approved limits, and no systemic environmental protection failures were identified in 2024.

Overall Questions:

- How are emerging contaminants (e.g., new chemical byproducts from processing) identified and monitored in environmental programs?
- Are there mechanisms for communities to request additional independent monitoring if they have concerns about local environmental health?
- For facilities with past issues (e.g., Best Theratronics Ltd.), how is environmental protection ensured during heightened regulatory scrutiny?
- Are there cumulative environmental impact assessments across multiple facilities within a region?