Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 25-M9.21

Date: 2025-01-10
File / dossier: 6.02.04
Edocs pdf: 7440800

Written submission from Nuclear Transparency Project

Mémoire du Projet de transparence nucléaire

Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2023

Rapport de surveillance réglementaire des sites nucléaires pour 2023

Commission Meeting

Réunion de la Commission

February 25, 2025

Le 25 février 2025

Canada

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Submitted via email

January 10th, 2025

To President Tremblay and Members of the Canadian Nuclear Safety Commission,

> Re: Canadian Nuclear Safety Commission Staff's Regulatory Oversight Report on Nuclear Generating Facilities in Canada: 2023

We would like to begin by thanking the Commission for this opportunity to provide comments on this Regulatory Oversight Report (ROR). We would also like to recognize the efforts of Canadian Nuclear Safety Commission (CNSC) staff, Canadian civil society organizations, and Indigenous Nations for their informative publicly available materials and submissions on this matter.

About NTP

The Nuclear Transparency Project (NTP) is a Canadian-registered not-for-profit organization dedicated to supporting open, informed, and equitable public discourse on nuclear technologies. NTP advocates for robust public access to data and other types of information and helps to produce accessible analysis of publicly available information, all with a view to supporting greater transparency in the Canadian nuclear sector. NTP is comprised of a multi-disciplinary group of experts who work to examine the economic, ecological, and social facets and impacts of Canadian nuclear energy production. We are committed to interdisciplinary, cross-sectoral, and equitable collaborations and dialogue between regulators, industry, Indigenous nations and communities, civil society, members of host and potential host communities, and academics from a variety of disciplines.

About this intervention

NTP's intervention was made possible by CNSC funding through its Participant Funding Program (PFP). These submissions were drafted by NTP founder and coordinator Pippa Feinstein, JD LLM in collaboration with biologist Dr. Tamara Fuciarelli, data analyst and engineer Alan Rial, M. Eng., and student researcher Alexandra Chernoff.

Our submissions have been divided into three parts: the first part contains a review of the current ROR; the second part addresses and builds on our previous recommendations to increase the amount of publicly accessible data collected by nuclear generating facilities;

and the third part contains recommendations relating to procedural or administrative aspects of these ROR proceedings.

As this is NTP's third year intervening on the ROR for nuclear generating facilities, our comments have been drafted to build on the previous two years' recommendations. We have also attached as an appendix a recent submission we made to CNSC staff during a public consultation opportunity concerning potential amendments to REGDOC 3.2.1 – Public Information and Disclosure. These appended comments provide more detail relating to our recommendations below and are provided for the benefit of CNSC staff and Commissioners' reference.

PART ONE: NTP's review of the ROR

Firstly, NTP appreciates the new standardized format of this ROR. This new format is easier to navigate than previous RORs and will facilitate easier comparison between this year's ROR and future RORs for nuclear generating facilities. The new format will also assist with future comparisons between RORs for different licensee categories each year. Additionally, tables have been provided as text rather than images, allowing for some machine-readability. This has in turn allowed us to incorporate tables from this year's ROR into our own internal database of information relating to Canadian nuclear facilities. These two formatting changes to this year's ROR improve both the accessibility and public utility of these annual reports.

Secondly, as we noted last year, NTP understands how demanding RORs must be to prepare. The size and complexity of nuclear generating stations must make this a particularly challenging ROR. The more we learn about each generating station, the more we realize how much more there is to understand. Further, of all the categories of CNSC licensee, generating facilities are amongst the ones that proactively share the most data and information with the public. However, the ROR for generating facilities has the least amount of data compared to most other RORs, especially when compared against the RORs for uranium and nuclear processing facilities and uranium mines and mills. While the volume of environmental data from nuclear generating stations is high, some cursory analysis by the regulator could assist members of the public in their understanding of facilities' operations each year.

We acknowledge a line has to be drawn somewhere as providing too much information relating to generating stations each year could make for an unwieldy and inaccessible ROR. However, we still believe this line can be drawn to favour more disclosure than is currently provided. We make the following observations and recommendations with a view to how making relatively small changes could make significant improvements in transparency.

Last year, NTP recommended that CNSC staff comment on the feasibility and desirability of providing summaries of environmental data in its ROR similar to what is done in RORs for uranium and nuclear substance processing facilities and uranium mines and mills. In

their supplemental CMD, CNSC staff noted they "acknowledged the request and would consider its application for future RORs".[1] However, NTP did not notice a significant increase in information or data included in this year's ROR. As such, we resubmit a slightly amended version or our recommendation to CNSC staff, this time focused on what potential barriers there may be to providing greater disclosure.

Recommendation 1: that CNSC staff identify current barriers they may face preventing them from providing summaries of environmental data in its ROR similar to what is done in RORs for uranium and nuclear substance processing facilities and uranium mines and mills.

Further, there are some areas in the ROR where information is provided without sufficient explanation or context to facilitate public understanding and transparency. Last year, we provided an example of this in the Fitness for Service portions of the ROR. In that year's ROR, tables were provided for each generating station noting the number of maintenance works in different categories, and commenting on whether that number was greater or less than previous years or other facilities. No definitions were provided for the different categories of maintenance work and no descriptions of the relative severity of listed maintenance works were provided either.

This year, no tables were provided, nor were maintenance categories noted. Instead, general completion ratios for all backlogged maintenance work were given as general percentages. In our view, this is a further step backwards, effectively denying a public understanding of the nature of these maintenance activities and what they require, why they have been delayed, and how their completion is ultimately assessed by CNSC staff. Canadian nuclear generation stations are many decades old, operating toward the end of their design lives if not operating beyond them. This makes the issue of maintenance a particularly significant one. More information on this issue would be in the public interest, and only need constitute a few additional paragraphs in each year's ROR.

Recommendation 2: that future RORs for nuclear generating facilities include more detailed discussions of maintenance work at regulated facilities including a description of the maintenance work required, why it was delayed, what was done to complete the work and how its completion and quality were assessed by CNSC staff.

Another example of an area in which more information should be included in the ROR, in order to facilitate greater public understanding and transparency, relates to reportable events and instances of licensee non-compliance. Here, we will focus our discussion more specifically on radiation protection and environmental releases. Currently, the ROR notes the numbers of non-compliances according to Safety Control Areas for each licensee, but does not consistently describe these non-compliances, any measured impacts resulting from non-compliance, or corrective measures taken and how they were assessed by CNSC staff. While some of this information may be provided in some instances, other information in other instances, the inconsistencies make these portions

[1] CNSC staff, CMD 23-M36.B, December 6, 2023, online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD23-M36-B.pdf/object, a p 6.

of the RORs difficult to understand in real terms.[2] This is also true for Action Level exceedances and unplanned release events, where their descriptions in the ROR are sometimes accompanied by volumes or concentrations of released materials, while other times they are merely described as "negligible" without any further information provided to support this characterization.[3] Reviewing the Event Initial Reports linked to in the ROR, we have found similar inconsistencies and a lack of accompanying data. This ROR would benefit from more consistency in this area as well.

Recommendation 3: for identified non-compliances, NTP recommends that future RORs include descriptions of the nature of the non-compliance, their cause, explain their significance (with any associated data values in the case of resulting environmental or dose releases), and explain whether or how the non-compliance is resolved.

Recommendation 4: for release events, NTP recommends future RORs share the following information:

a. *The date, time, and duration of the event;*
b. *Location of the event;*
c. *Any measured releases to the environment on- and/or off-site. Here, concentration and/or activity (preferably in sieverts or grays in addition to becquerels) and volumes should be provided. If no measurements are taken, reasons for this should be provided along with estimated release concentrations and volumes;*
d. *Relevant licence limits, i.e. facility-specific action levels, derived release limits as well as applicable regulatory environmental standards or release limits; and*
e. *A description of any mitigation and follow-up monitoring efforts, including any available monitoring data.*[4]

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[2] See for example p 26 where seven non-compliances are noted relating the Darlington Nuclear Generating Station's radiation protection plan without much more information provided; p 34 where a desktop review of the Darlington Waste Management Facility's Public Information and Disclosure plan had a non-compliance which was not described; pp 114 and 117 where two non-compliances are noted in relation to the Point Lepreau Generating Station's radiation protection plan and a "negligible" non-compliance is noted relating to worker doses, none of which are described further; and p 124 where a "negligible" non-compliance is noted for Gentilly-II's radiation protection plan without any further description. CNSC Staff, CMD 25- M9, Regulatory Oversight Report for Nuclear Generating Sites for 2023.

[3] See for example: p27 where an Action Level at the Darlington Nuclear Generating Station is exceeded, the exceedance is noted but its cause is not; p 55 where Action Level exceedances are noted at the Pickering Nuclear Generating Station for gross beta/gamma in sewage and a temperature release exceeds provincial limits but no values provided for either of these releases; p 85 where an Action Level is exceeded at the Bruce Nuclear Generating Station with no corresponding values provided. Other times, values do accompany event descriptions, such as a 40L oil spill at Gentilly-II on p 117 and p 54 where an Action Level exceedance in internal dose to a Nuclear Energy Worker is provided. CNSC Staff, CMD 25-M9, Regulatory Oversight Report for Nuclear Generating Sites for 2023.

[4] This recommendation is taken from our submissions relating to REGDOC 3.2.1, appended to these ROR submissions. While an amendment to the REGDOC may be a way for the public to access this kind of information, its inclusion in RORs (or in hyperlinked Event Initial Reports provided in RORs) may be another means for public access to this information.

Finally, at the start of this year's ROR, hyperlinks are provided for the licensees covered by the report. Clicking on the hyperlinks however, takes to reader to several general (i.e. non-facility specific) licensee websites.[5] Hyperlinks to the CNSC webpages for these facilities are only provided a few pages later.[6] NTP submits that future RORs should only provide hyperlinks to CNSC facility-specific webpages. These webpages still contain hyperlinks to licensee websites, but do so in a context of also providing a variety of other sources of third-party information relating to the particular facility, for interested members of the public. Such a practice would be more consistent with the Commission's core mandate to disseminate objective information.

Recommendation 5: that future RORs prioritize hyperlinking to facility-specific CNSC webpages and not licensee websites.

PART TWO: NTP's review of publicly accessible data for generating facilities

Last year, NTP made a series of recommendations to improve the breadth of data disclosures and advocated for greater standardization of reported data between, nuclear generating facilities – this is discussed in more detail in part four of the appended REGDOC 3.2.1 comments. In that submission as well as NTP's submission for the mid-term licence update for the Bruce Nuclear Generating Station, NTP also made recommendations relating to the need for greater transparency and standardization of licensees' interactive online applications ("apps") used to convey environmental monitoring.[7]

At the Commission meeting for the Bruce Power mid-term licence update, CNSC staff noted they were not "ready yet to regulate applications" nor were they "planning to do that in the near future".[8] Rather, CNSC staff undertook to "work with the licensees, with the applicants and members of the public to make sure that the flow of information is optimized and efficient for the purpose".[9] CNSC staff have also since confirmed that the "CNSC will collaborate with the licensees and members of the public to facilitate the optimized presentation of environmental data that is made publicly available by licensees" with the caveat that this would not extend to licensees' apps, noting "However, CNSC does not plan to regulate the information shared by the licensees in their online applications that share environmental data".[10]

NTP would like to take this moment to clarify that the regulation of these emerging apps should not significantly differ from the way CNSC staff regulate any other method by which

[5] CNSC Staff, CMD 25- M9, Regulatory Oversight Report for Nuclear Generating Sites for 2023, at p 3.
[6] CNSC Staff, CMD 25- M9, Regulatory Oversight Report for Nuclear Generating Sites for 2023, at p 5.
[7] Nuclear Transparency Project, Written Submission for Bruce Power Mid-Term Update of Licensed Activities, CMD 23-M27.29, August 3, 2023.
[8] Transcripts from September 20, 2023, Commission Meeting to Consider Bruce Power Mid-Term Update of Licensed Activities, at p 165.
[9] *Ibid.*
[10] CNSC staff, CMD 23-M36.B, December 6, 2023, online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD23-M36-B.pdf/object, a p 7.

licensees share their monitoring data. Rather, as a nuclear regulator with a mandate to share technical information with the public, NTP argues that the CNSC should work to verify the accuracy and comprehensiveness of these apps to ensure they do not confuse or mislead the public. Here, NTP would again direct CNSC staff and Commissioners to part four of the comments appended to these submissions as they detail the kinds of information the public has an interest in, and the ways CNSC staff can ensure the accuracy and accessibility of this information.

PART THREE: NTP's recommendations for future ROR intervention processes

Two years ago, NTP had requested more time to prepare our ROR interventions. Last year and this year, the CNSC responded by increasing the amount of time between funding decisions, ROR publication, and the final due dates for intervenors' written submissions. The consistency between these new timelines from year to year is also helpful as it allows our organization to effectively plan how it will undertake its funded work and coordinate tasks between its different contributors.

We inquired about the later dates for this intervention and the one concerning the ROR for uranium processing facilities this year and were told by the Registry that it was due to a heavy hearing load at the end of 2024 which pushed these two RORs later into 2025. We understand that next year, ROR meeting schedules will return to their usual timeframes. This would be most appreciated and assist us with the necessary preparations for those interventions, should we be granted funding to do so at that time.

Recommendation 7: that timeframes for ROR interventions continue to provide at least 10 weeks between funding decisions and final submission due dates; at least 6 weeks between the publication of RORs and final submission due dates; and that these dates for each step of the ROR process remain consistent from year to year.

In previous years, NTP has requested the ability to present oral submissions at Commission meetings to consider RORs. This used to be an automatic aspect of ROR interventions, but in recent years has only been extended to intervenors when RORs coincide with mid-term licensing updates from specific facilities. With longer licence terms being approved for nuclear facilities over the last few years, and smaller panels of CNSC Commissioners being convened for licensing hearings, opportunities for civil society organizations to engage with Commissioners has become increasingly limited. This is despite the fact that interacting with Commissioners during meeting and hearing proceedings has the potential to significantly improve the quality of engagement with intervenors' submissions, offering more opportunity for mutual learning and increased familiarity with organizations' advocacy priorities and the CNSC's mandate and approach to related issues. As such, NTP recommends a return to the practice of permitting intervenors to present oral submissions before Commissioners during ROR proceedings.

Recommendation 7: that opportunities to make oral submissions be extended to all intervenors, ensuring more meaningful opportunities to contribute to the public record for these ROR proceedings.

Finally, the review of the PFP funding criteria is an outstanding item that NTP would again like to propose for the CNSC's consideration. The scoping of ROR interventions by the funding grants and conditions intervenors receive can effectively shape the substantive content of ROR proceedings and impact the public record and any outcomes from Commission meetings. Developing a broader definition of the types of analysis and experts eligible for funding could expand the scope of funded interventions while still remaining consistent with the Commission's mandate.

Recommendation 8: that the CNSC's PFP develop more specific and expansive intervenor funding criteria, in consultation with members of the public and public interest organizations.

APPENDIX A

nuclear
transparency
project

Website: www.nucleartransparency.ca
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Submitted via email

December 5, 2024

To Canadian Nuclear Safety Commission staff,

Re: NTP comments for the public consultation relating to REGDOC 3.2.1

We would like to thank the Canadian Nuclear Safety Commission (CNSC) for this opportunity to provide comments on REGDOC 3.2.1: Public Information and Disclosure. These comments have been supported with funding from the Regulatory Policy Dialogue stream of the CNSC's Indigenous and Stakeholder Capacity Fund.

Our submissions below are divided into five parts: first, we provide comments related specifically to the discussion paper detailing CNSC staff's proposed amendments to REGDOC 3.2.1; second, we contextualize REGDOC 3.2.1 within larger trends toward greater disclosure by regulators and licensees; third, we propose additional types of information and data disclosure REGDOC 3.2.1 could support; fourth, we propose several concrete ways in which REGDOC 3.2.1 can increase an standardize proactive data sharing by licensees; and finally, we share experiences and recommendations relating to the enforcement of this REGDOC.

But before we proceed to these discussions, we will introduce our organization and outline our interest in this public consultation opportunity.

About NTP

NTP is a Canadian-registered not-for-profit organization dedicated to supporting open, informed, and equitable public discourse on nuclear technologies. NTP advocates for robust public access to data and other types of information and helps to produce

accessible analysis of publicly available information, all with a view to supporting greater transparency in the Canadian nuclear sector.

NTP engages with a multi-disciplinary group of experts to address economic, ecological, and social facets of the Canadian nuclear sector, producing public reports, academic articles, and other publicly accessible resources as well as intervening in regulatory decision-making processes. The organization seeks to support youth and early career scholars, especially those from underrepresented communities and groups. NTP also recognizes a responsibility to model the transparency and accountability practices for which it advocates. It is committed to interdisciplinary, cross-sectoral, and equitable collaborations and dialogue between regulators, industry, civil society, members of host and potential host communities, as well as academics and professionals from STEM fields, the social sciences, and humanities.

NTP's interest in this public comment opportunity

Under its enabling legislation, a core mandate of the CNSC is to "disseminate objective scientific, technical and regulatory information to the public concerning nuclear activities".[11] REGDOC 3.2.1 is the primary guidance document for shaping the CNSC's expectations of licensees in this area, determining the parameters for proactive information disclosure in the Canadian nuclear sector.

Since its founding in 2020, NTP's work has focused on CNSC public information and disclosure policies and practices. REGDOC 3.2.1 has been central to our advocacy for nuclear transparency because of its profound effect on the ability of civil society to learn about and intervene on nuclear issues. A robust REGDOC 3.2.1 can support informed public engagement on nuclear issues – the result of which can in turn improve regulatory decision-making, allowing it to respond to a broader range of considerations and interests. A weaker REGDOC 3.2.1 on the other hand can pose a significant barrier to informing the public about Canadian-regulated nuclear facilities, essentially preventing the public from weighing in on nuclear matters and frustrating responsive nuclear regulation.

Most of NTP's interventions to date have relied on provisions in REGDOC 3.2.1 to obtain important information from licensees. We also assess the extent to which nuclear facilities adhere to the REGDOC's requirements, making recommendations that can give better effect to this REGDOC on the ground. In this way, NTP's experience attests to how important REGDOC 3.2.1 is in practice and underscores our interest in strengthening and updating its contents.

[11] Section 9(b) of the *Nuclear Safety and Control Act*, SC 1997, c9.

PART ONE:
Comments on currently proposed changes to REGDOC 3.2.1

This part of our submissions provides comments relating to specific portions of the discussion paper released for this REGDOC consultation. Further comments on some of the proposed provisions are also contained in subsequent parts of these submissions.

In section 1.1 of the REGDOC discussion paper, CNSC staff propose "to clarify the use of the term "event" to make a clear distinction between events that need to be disclosed to the public and those that must be reported to the CNSC". Here, NTP submits that all events noted in section 2.3.2 of the current REGDOC 3.2.1 should still be reported to the public – namely, unplanned events (including but not limited to those exceeding regulatory limits), fires, labour disputes, planned and unplanned interruptions in facility operations, any impacts of natural disaster events, and any planned or unplanned contaminant releases on- or off-site. Ideally, the event reports described in REGDOC 3.1.1 and REGDOC 3.1.2, should also be disclosed to the public (as well as submitted to CNSC staff). Any concerns about confidentiality in these event reports can be resolved by selective redactions in publicly-available versions of the report (provided rationales for these redactions are provided). As these event reports must be compiled for CNSC staff pursuant to these other REGDOCs, their disclosure to the public as well should not be too taxing on licensees.

Section 2.3 of the REGDOC discussion paper proposes "to provide risk-based criteria in the [REGDOC's] scope that would determine which licensees/facilities must provide a PIDP [public information and disclosure program]… The need for this requirement will be assessed during the licence application stage and will be based on the scope of activities being conducted". Here, NTP submits that all CNSC-regulated nuclear facilities should have PIPDs, though the contents of those PIPDs may vary. This is because members of the public should be able to know where all nuclear energy-related facilities are located, and what each facility does. In practice, simpler facilities that have smaller operations may have more basic PIPDs and public disclosures. For example, a facility that only releases small amounts of effluent to city sewers and has no other environmental releases would only disclose those sewer releases and explain no other emissions originate from the facility. This would be less complex than the PIPD and associated disclosures required of a nuclear generating station, for example, whose operations are larger and wide-ranging. However, the smaller facility should still have a duty to communicate to the public,

ensuring the local community is aware of what they do and how they interact with local infrastructure and the environment.

Section 2.4 of the REGDOC discussion paper proposes that licensees conduct more frequent reviews of their PIPDs. This is a positive development that NTP supports – it should not be too taxing on licensees either, as reviews do not necessarily have to result in significant changes to the PIPDs if not necessary. CNSC staff also propose to remove the requirement that PIPDs' be developed in ways commensurate with the public's perception of risk. This is also a positive development NTP supports – all PIPDs should contain the same basic principles informed by a public interest in transparency rather than subjective assessments of public perceptions of risk.

Section 2.6 of the REGDOC discussion paper proposes "the CNSC will clarify its expectations for the submission of Environmental Risk Assessments (ERAs) and Probabilistic Safety Assessments (PSAs), including the inclusion of raw data, and formalize if and how a licensee can seek exemption from disclosing information". It also proposes "the CNSC will revise this section to clarify the documents to be disclosed rather than letting the extent of the program be defined by the public's perception of risk and level of public interest". NTP is delighted to see reference to disclosures of raw data and has provided further comments relating to data disclosure for CNSC staff consideration in these submissions below. These submissions also address the mandatory disclosure of ERAs in more detail below.

CNSC staff also propose "a non-exhaustive list of mandatory documents to be posted by licensees (e.g., plain language summary of the PIDP, summary of decommissioning plans, environmental monitoring Public Information and Disclosure report, annual compliance reports)". NTP is pleased to see this list provided in the discussion paper. However, we strongly believe that original reports should be provided in whole rather than summaries. Should portions of these reports be deemed confidential by licensees and CNSC staff, they can be redacted with accompanying rationales for each redaction. Redactions should also be as limited as possible. This stance is based on several instances in which NTP contributors were able to access full reports from licensees and compare them against the summaries of these reports posted online. In all these cases, summary documents contained broad assurances that could not be properly assessed or verified, while the larger reports contained more developed discussion and analysis which could be reviewed. As such, the full reports proved infinitely more informative and useful than their summaries.

Finally, section 2.8 of the REGDOC 3.2.1 discussion paper would allow licensees to dispense with a designated contact person responsible for public interface in PIPDs,

provided they can still ensure they would provide responses to public queries. Here, NTP submits that CNSC staff should strongly encourage licensees to have a designated contact person to interface with the public. Relationship building between facilities and the public is an important aspect of transparency as it supports mutual learning and understanding which can in turn increase transparency. To date, NTP has interacted with licensees who have designated contacts for the public, and those who do not. For the licensees which have these contacts, NTP has found responses to information requests are more detailed and catered to our needs and interests. After years of developing relationships with designated licensee contacts, NTP has also received more proactive notices of developments at these facilities, thus developing deeper understandings of these facilities' operations. All nuclear licensees likely have communications staff. Ensuring these staff also communicate with members of the public should not be considered too taxing, given the significant benefits that can arise from such work.

PART TWO:
Contextualizing REGDOC 3.2.1 within larger trends toward proactive data disclosure by regulators and licensees

Since this REGDOC was last reviewed in 2017, the policy landscape for data and information sharing has dramatically changed. At that time, the federal government's Open Government initiative was in its earliest stages. Now, the Open Government data portal has become an extensive source of information and data supporting government transparency and accountability.[12] As it continues to expand, the portal has become a crucial resource for civil society's work.

Recently, government conceptions of data sharing have also advanced with the recognition of a public interest in disaggregated data. A new federal Disaggregated Data Action Plan has promised to focus on breaking down datasets with a view to differentiating diverse populations of people over distinct geographic areas.[13] This past year nearly half of the economic, social, and health-related data uploaded to the portal was disaggregated.[14]

Last year, the International Atomic Energy Agency (IAEA) also launched a new open data platform. This resource centralizes, categorizes, and standardizes a series of

[12] See: Government of Canada, "About Open Government"", online: https://www.canada.ca/en/government/system/government-wide-reporting-spending-operations/trust-transparency/about-open-government.html.
[13] Statistics Canada, Disaggregated Data Action Plan, online: https://www.statcan.gc.ca/en/trust/modernization/disaggregated-data.
[14] *Ibid.*

international nuclear-related databases, facilitating their use (and the possibility for significant comparative analysis) by governments, academics, and civil society around the world.[15]

Mandated information and data sharing requirements of Canadian government agencies are also increasingly met via the creation of centralized online information and data platforms. The CNSC has initiated several initiatives in line with this trend, making use of the Open Government data portal to upload regulatory documents and annual radionuclide loadings from nuclear facilities.

During the last round of public comments on this REGDOC in 2017, civil society organizations pushed for data disclosure to be included in the list of types of information that can be disclosed.[16] Many licensees ultimately objected to any increase in environmental information or data disclosure but since then, some licensees have begun to voluntarily disclose environmental data online. For example:

- Bruce Power has two new interactive electronic applications ("apps"): one provides data measuring thermal discharges into Lake Huron from the once-through cooling system at the Bruce Nuclear Generating Station;[17] the other app provides environmental monitoring data for soil, sediment, groundwater, and surface water on and around the Bruce Nuclear site, where users can select the contaminates, parameters, locations, years, and benchmarks they are most interested in seeing;[18]
- Ontario Power Generation also has two interactive online maps that disclose groundwater monitoring results at selected points in and around the Darlington and Pickering Nuclear Generating Stations respectively. Data can also be filtered by year.[19]

Joint ventures between government departments, agencies and licensees have also emerged more recently, collecting and disseminating environmental monitoring data results to the public. An example of this is the Eastern Athabasca Regional Monitoring Program which is a joint initiative of the government of Saskatchewan, CNSC, Cameco

[15] See: https://www.iaea.org/newscenter/news/iaea-launches-open-data-platform.
[16] See: SwimDrinkFish/Lake Ontario Waterkeeper, "Comments for public consultation concerning proposed REGDOC 3.2.1", September 28, 2027, online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/Comments-REGDOC-3-2-1-SDFCLOW.pdf/object.
[17] See: https://wsp-shinyapps.shinyapps.io/ERA_temperature/.
[18] See: https://wsp-shinyapps.shinyapps.io/ERA_screening_tables/.
[19] See: https://opgi.maps.arcgis.com/apps/View/index.html?appid=736547b88cc2421daddb5167a9283485 and https://opgi.maps.arcgis.com/apps/View/index.html?appid=096d1c190a7644c6a98e858ecf1c1c94.

and Orano. The Program collects off-site regional environmental data (namely fish, fish, and berry chemistry) and discloses the sampling data and methodologies online.[20]

Given these developments since 2017, we believe this a good time to update REGDOC 3.2.1 by encouraging licensees to proactively disclose data. The REGDOC can also provide guiding principles for this data disclosure, standardizing this data and ensuring a base level of quality.

PART THREE:
Additional types of data disclosure for the REGDOC to support

NTP is most often concerned with transparency and access to information relating to: working conditions at nuclear facilities, the ecological footprint of nuclear facilities, data pertaining to nuclear financing and liability; and workforce demographics at nuclear facilities. The biggest strides have so far been made with regard to environmental data, though we make a case below for increased environmental data reporting along with the disclosure of data from these other categories.

Canadian workers' rights have long included a 'right to know' about workplace conditions, where employees must be informed of any contaminants they may be exposed to in the course of their employment.[21] This has in turn been operationalized via the Workplace Hazardous Materials Information System (WHMIS), a centralized source of information for workers to understand and manage potential exposures to contaminants at work.[22] The system was designed to align with an international GHS, the Globally Harmonized System of Classification and Labelling of Chemicals, ensuring information across multiple jurisdictions can be more easily compared.[23] Unfortunately, radioactive substances have been excluded from this resource constituting a significant gap for workers in nuclear facilities.

Some licensees post annual compliance reports online that contain averaged worker exposure data. High-level summaries of licensees' worker dose data are also available in annual Regulatory Oversight Reports prepared by CNSC staff. However, more work in this area can be done to integrate worker exposure data in the nuclear sector with the WHMIS. Further, machine readable disaggregated data sets relating to worker exposure

[20] A summary of this initiative's work and monitoring results can be found here: https://static1.squarespace.com/static/5dbe06cc238618542745a133/t/64ece072ca78f6552a5531b7/1693245563438/EARMP+2022+2023+Community+Report.pdf
[21] Usually contained in provincial Occupational Health and Safety Acts.
[22] https://www.ccohs.ca/oshanswers/chemicals/whmis_ghs
[23] https://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/general.html#section-1-hdr

can be included in the Open Government data portal where it can be compared with other radionuclide release datasets.

Recommendation 1: that REGDOC 3.2.1 encourage licensees to make disaggregated worker exposure data publicly available in machine-readable formats that can be integrated with existing online information and data portals.

A public 'right to know' also animates Canadian environmental legislation such as the *Canadian Environmental Protection Act* (*CEPA*) which recognizes that members of the public have a right to know about potential exposures to identified contaminants in consumer products as well as those released from industrial facilities. This public notification is ensured in part via the National Pollutant Release Inventory (NPRI) which publicly discloses annual contaminant loadings to air and surface water from Canadian-regulated industrial facilities. For the past several years, the NPRI database has begun to include public disclosure of annual loadings (to air and surface water) of radionuclides released from many CNSC-regulated facilities – data that is input annually by CNSC staff.

While this development is a positive one, NTP believes more environmental data can be encouraged without much disadvantage to licensees. In particular, an updated REGDOC 3.2.1 can encourage licensees to disclose disaggregated environmental data relating to emissions to air and surface water. Further, in addition to released contaminants into the air and surface water around nuclear facilities, the REGDOC can encourage licensees to publicly release disaggregated data detailing soil, sediment, stormwater, and groundwater conditions on and around their facilities.

Recommendation 2: that REGDOC 3.2.1 encourage licensees to publicly disclose disaggregated environmental data detailing releases to air and surface water as well as any soil, sediment, stormwater, and groundwater conditions on and around their facilities.

Frameworks for the proactive public disclosure of financial information and data have also grown in recent years, resulting in increased economic transparency in government and the private sector. The Open Government portal contains considerable data documenting government spending on salaries, expenses, grants, and contracts.[24] In the private sphere, new laws institute mandatory and standardized sustainability reporting to the public. This past year, the European Union enacted a directive setting out the requisite contents for this public reporting.[25] Canadian draft sustainability disclosure standards are

[24] See for example: https://open.canada.ca/en/proactive-disclosure.
[25] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting, online: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022L2464

also being developed in adherence to a baseline developed by International Sustainability Standards Board.[26] OPG constitute a high-water mark in this regard: as a Crown corporation, the company has more stringent financial transparency requirements and are subject to additional public financial oversight by the Ontario Energy Board in case of hearings for electricity rates. For increased accessibility, OPG posts its financial reports to its website. Requiring more detailed public financial reporting from private companies would understandably be harder than it would for Crown corporations. However, in keeping with the recent trends above, NTP submits that there is a public interest in better understanding nuclear financing.

One area that would merit more public disclosure would be the emerging 'green financing' schemes created to support the construction of new nuclear facilities. An example of this is Bruce Power's "green bonds" initiative.[27]

Recommendation 3: that REGDOC 3.2.1 encourage licensees to publicly disclose information relating to their 'green financing' structures.

Additionally, NTP believes there is a compelling public interest in access to more detailed cost breakdowns and financing arrangements relating to nuclear liability and financial guarantees for facility decommissioning. Most licensees apply to the Commission to treat this information as confidential and these requests tend to be granted by Commissioners. NTP has expressed concerns over this lack of transparency in recent proceedings relating to Cameco's application to keep its decommissioning and financial guarantee submissions confidential for the Port Hope Conversion Facility[28] and BWXT NEC's application for the same in relation to its Toronto and Peterborough facilities.[29] An updated REGDOC 3.2.1 should encourage the proactive disclosure of decommissioning plans, financial guarantees, and nuclear liability arrangements, permitting redactions to these documents as needed rather than short high level summaries of these documents.

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[26] Sarah Marsh, Scott Morrison, and Jennifer Lawson, "Canada's Draft Sustainability Disclosure Standards", online: https://www.pwc.com/ca/en/today-s-issues/environmental-social-and-governance/insights/need-to-know-about-csds.html.
[27] See: Nuclear Transparency Project, "Comments relating to Bruce Power's mid-term report on licensed activities", August 3, 2023.
[28] See: Nuclear Transparency Project, submission relating to "Commission consideration of Cameco Corporation's revised preliminary decommissioning plan and financial guarantee for the Port Hope Conversion Facility", December 18, 2023.
[29] See: Nuclear Transparency Project, submission relating to "Commission consideration of BWXT NEC's revised preliminary decommissioning plan and financial guarantee for its Toronto and Peterborough facilities", February 5, 2024.

Recommendation 4: that REGDOC 3.2.1 encourage licensees to be more forthcoming about their financial guarantees for facility decommissioning and their management of nuclear liability

Finally, NTP advocates for licensees to proactively disclose employment demographic data (anonymized as required) to allow the public to understand who is employed in the nuclear sector and how jobs are apportioned across populations. Breakdowns of employees and levels and types of employment by gender, Indigeneity, racialization, disability, and sexual orientation would be good information to have publicly available.

Recommendation 5: that REGDOC 3.2.1 encourage licensees to publicly disclose anonymized data indicating demographic breakdowns (gender, Indigeneity, racialization, sexual orientation, and disability) across employment types

PART FOUR:
Suggesting ways the REGDOC can better support access to information via proactive data sharing

REGDOC 3.2.1 can become an important source of encouragement for licensees to publicly disclose data. It can also provide a baseline and further guidance for licensees who already provide data or are working towards doing so. The following recommendations are divided into proposed best practices for routine data disclosure and disclosure in the context of unplanned events.

<u>Routine data disclosure</u>

REGDOC 3.2.1 is careful to distinguish between which types of disclosure are required and which are only suggested. Throughout these comments, we have tried to make the same distinctions. In the recommendations below, mandatory language is used to indicate what we believe should be baseline requirements for all data disclosure; while discretionary language is used to recognize when a proposed measure may be more aspirational or take more time for licensees to pursue and implement. NTP is sensitive to the fact that not all facilities will currently have the capacity to proactively disclose data. As such, our proposed measures are meant to guide those already disclosing data and support those for whom it would take more time to begin posting data.

The first recommendation to improve routine disclosures would be for licensees to automate the processes by which data is generated, stored, and reported. Over the course of multiple interventions, NTP has learned that several licensees receive sampling

results back from laboratories in PDF formats. Licensees then manually transpose or average out and report results to CNSC staff in PDF formats. When CNSC staff upload NPRI data to the Open Government data portal, they also do so manually from these PDF reports. Each time data is manually input, it takes a considerable amount of time and introduces risks of human error. Such a process also effectively prohibits the disclosure of large datasets.

Laboratories likely input data results into a machine-readable software, such as excel, to report to licensees. If they were to automatically share this version with licensees, licensees could in turn automatically forward this version to the CNSC who could then also upload it to online data portals. Such automatic pipelines could facilitate easy, accurate, and potentially real-time public disclosures of small and large datasets.

Recommendation 6: that REGDOC 3.2.1 require licensees (who have not already automated their data pipelines) to assess the feasibility of, and develop plans for, automating pipelines for data collection and reporting

Machine-readable data is especially useful as it also allows users to employ a variety of software to perform their own analysis and visualizations of the data – this would be true for licensees, the CNSC, and civil society.

Recommendation 7: that REGDOC 3.2.1 require licensees (who do not already share machine-readable data) to assess the feasibility of, and develop plans for, sharing data in machine-readable formats

Because automated data pipelines and machine-readable data formats will save licensees time and effort, while providing significant benefits to all data users, NTP believes it is reasonable for the REGDOC to make the above two requirements mandatory.

In situations where facilities collect environmental samples quarterly, monthly, weekly, and/or daily from a variety of stacks, outfalls, ambient air and water locations, and along other pathways from nuclear facilities, NTP believes there is a public interest in accessing this disaggregated data. Limiting licensees' data disclosure to averages rather than raw values can hide concentration peaks or spikes. Annual data averages can hide seasonal variations in facilities' ecological footprints. Ultimately, more detailed data will provide the public with a better understanding of the ongoing and dynamic interactions between facilities and the ecosystems of which they become a part. Uploading this disaggregated data can also support people to make informed decisions about their proximity to these facilities (including when or whether to pursue recreational activities, food or medicine

gathering, and other practices nearby). Again, the automation of machine-readable data disclosure can facilitate the easy disclosure of disaggregated data.

Recommendation 8: that REGDOC 3.2.1 strongly encourage all licensees to disclose disaggregated data. For those licensees who already have automated data pipelines with machine-readable data, the disclosure of disaggregated data should be mandatory.

NTP also submits that sampling methodologies should always accompany the disclosure of monitoring results. Licensees must be transparent about how spatial and temporal boundaries were determined, clearly explaining what is being sampled, how often, and why. Any modelling used to determine the scope of real-world monitoring should also be disclosed and explained alongside sampling results. Further, decisions relating to the selection of certain ecological receptors over others should be explained and the scientific basis for these decisions disclosed. All data collection efforts need to be scoped in order to be manageable, however how this scoping is done should be transparent and defensible.

A lack of methodology disclosure also risks that data can inadvertently mislead users. For example, when cross referencing OPG's interactive GIS maps of groundwater sampling results against available OPG monitoring reports elsewhere, it became apparent that not all groundwater sampling locations were being included each year in the GIS maps. In practice it also appeared as though some of the groundwater monitoring wells that displayed some of the most elevated tritium levels in monitoring reports were not always included in the GIS maps. It took multiple interventions relating to OPG facilities and back and forth with OPG subject matter experts to understand that only one third of monitoring wells are sampled each year according to modelling that is conducted to predict the migration of contaminants underground. Economic considerations also determined the scope of these groundwater monitoring practices as OPG argued it would be too expensive to monitor all locations at a higher frequency. NTP is still working to understand how this modelling is done and what its scientific basis is. Proactive disclosure of these things upfront would prevent the potential for misinformation, and ensure data users understand and correctly analyze the disclosed data.

Similarly, NTP noticed that the interactive map released by Bruce Power detailing monitoring results for soil, sediment, groundwater, and surface water in and around the Bruce Nuclear site was missing several years' worth of data. Certain receptors and areas of the site were also sampled more than others. We have been engaging with Bruce Power staff to understand the reasons for these gaps and scoping decisions. However, clear and proactive disclosure of the rationale behind the data gaps alongside the sampling results would be a more efficient use of Bruce Power's and NTP's time.

Recommendation 9: that REGDOC 3.2.1 require the proactive disclosure of monitoring methodologies alongside sampling results

For nuclear licensees that provide monitoring data, NTP recommends that they include the coordinates (or maps) of sampling locations. Public efforts to understand the significance of disclosed monitoring values would be frustrated without important contextual factors such as geographical locations. For example, the numbers of liquid effluent discharge points and their relative proximity to known surface water currents, wetlands, beaches, spawning grounds, or fishing spots would be of interest to members of the public. Licensees will already have ready access to this information on file. As such, its disclosure should not prove too burdensome.

Recommendation 10: that REGDOC 3.2.1 require the disclosure of coordinates or maps of monitoring locations to accompany the disclosure of monitoring data results

Licensees must also be transparent about any data reporting errors and subsequent corrections. This can be done easily be disclosing notices of errors and their correction alongside disclosed datasets – this in turn will ensure public use and analysis of available data is accurate. This is now done for NPRI radionuclide datasets and can provide a template for licensee efforts.

Recommendation 11: that REGDOC 3.2.1 require licensees to disclose notices of any errata alongside disclosed data

In time, REGDOC 3.2.1 can work to standardize licensee data, better facilitating comparative analysis of reported datasets. For example, current NPRI datasets for nuclear generating facilities use “limit of detection” (LD) with a footnote that “<LD=0”; while data for uranium mines notes ‘detection limit” (DL). Nuclear processing data notes values of 0.00+E00; whereas values of 0 are noted in Canadian Nuclear Laboratories’ datasets. Datasets with LDs or DLs tend not to also report values of 0. NTP had to confirm with CNSC staff (over the course of multiple interventions) whether all these values indicated the same environmental release conditions, or whether there was a difference between certain limits of detection and confirmed values of 0. In this case, a proactive description of LDs, DLs, and 0 values would have enabled us to immediately interpretate and use of these datasets more confidently. Using the same terms across datasets to indicate the same conditions or measurements would facilitate comparative analysis by more data users, increasing the value and usability of this data.

Recommendation 11: that REGDOC 3.2.1 establish standardized terms for use by licensees across all datasets

Finally, any governance frameworks that guide the public release of data should fully incorporate Indigenous data sovereignty principles. Data protocols should be designed by (or with) Indigenous rights holders, ensuring protection and support for their inherent rights and diverse interests. There are several models and resources for this including the OCAP model (First Nations' "ownership, control, access, and possession") as developed by the First Nations Information Governance Committee.[30] There are also the international CARE Principles for Indigenous data governance which require that data be "findable, accessible, interoperable, reusable, for the collective benefit, authority to control, responsibility, and ethics" of Indigenous Peoples.[31] This provision could be included in REGDOC 3.2.1 as well as REGDOC 3.2.2.

Recommendation 12: that REGDOC 3.2.1 and/or REGDOC 3.2.2 require data collection and disclosure to adhere to data sovereignty principles guided by Indigenous rights holders

Data disclosure for reportable events

As discussed in part one of these submissions above, NTP submits that event reports required by REGDOCs 3.1.1 and 3.1.2 should also be disclosed to the public. On occasion some of these event reports are disclosed to the public, for example in recent Regulatory Oversight Reports for nuclear generating facilities. However, if original event reports are not disclosed to the public, NTP submits that the following information should still be required to be publicly disclosed by licensees:

- The date, time, and duration of the event;
- Location of the event;
- Any measured releases to the environment on- and/or off-site. Here, concentration and/or activity (preferably in sieverts or grays in addition to becquerels) and volumes should be provided. If no measurements are taken, reasons for this should be provided along with estimated release concentrations and volumes;
- Relevant licence limits, i.e. facility-specific action levels, derived release limits as well as applicable regulatory environmental standards or release limits; and
- A description of any mitigation and follow-up monitoring efforts, including any available monitoring data.

[30] See: https://fnigc.ca/
[31] See: https://www.gida-global.org/care.

Recommendation 12: that REGDOC 3.2.1 encourage licensees to disclose their event reports to the public, but at least share the following information:

f. The date, time, and duration of the event;
g. Location of the event;
h. Any measured releases to the environment on- and/or off-site. Here, concentration and/or activity (preferably in sieverts or grays in addition to becquerels) and volumes should be provided. If no measurements are taken, reasons for this should be provided along with estimated release concentrations and volumes;
i. Relevant licence limits, i.e. facility-specific action levels, derived release limits as well as applicable regulatory environmental standards or release limits; and
j. A description of any mitigation and follow-up monitoring efforts, including any available monitoring data.

PART FIVE:
Making recommendations relating to the enforcement of REGDOC 3.2.1

The most significant change introduced in REGDOC 3.2.1 back in 2017 was the requirement of licensees to publicly disclose their facilities' Environmental Risk Assessments (ERAs). Many licensees objected to this requirement at that time, however, ERA disclosure was ultimately included in the final updated version of the REGDOC. Since then, NTP has conducted a review of CNSC licensees' websites and learned that many facilities do not post their ERAs online. Through past interventions, we have also learned that CNSC staff encounter difficulties at times enforcing this requirement.

For example, Cameco objected to the inclusion of ERA disclosures in REGDOC 3.2.1 in 2017.[32] Despite it being included in the update REGDOC, Cameco has never publicly disclosed its ERAs. NTP has requested copies of Cameco ERAs for its mining and milling facilities, and been denied these reports. In the upcoming hearing to consider Cameco's application to revoke the CNSC licence for the Beaverlodge site, Cameco applied to the Commission for confidentiality for the entirety of its ERA.[33] ERAs contain descriptions of baseline ecological conditions in and around nuclear facilities, they list ecological receptors and identified valued ecosystem components, they describe monitoring and modelling methodologies. None of this information should be considered proprietary as it speaks directly to environmental wellbeing: something the public has a direct interest n knowing and understanding for their own wellbeing and health. NTP submits that CNSC staff should better enforce current ERA disclosure requirements in REGDOC 3.2.1.

[32] See: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/Comments-REGDOC-3-2-1-Cameco.pdf/object.
[33] See: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/Request-for-Confidentiality-Beaverlodge-CMD25-H3.pdf/object.

While REGDOCs themselves are not strictly legally enforceable as they are not regulations *per se*, but rather guidance documents, they are often included in license conditions handbooks for facilities where they become part of facilities' licensing basis and therefore legally mandatory.

Finally, NTP has also learned that there are certain types of facilities that prepare ERAs without having to disclose them; namely approximately ten smaller waste operating facilities covered by the Regulatory Oversight Report for facilities that use nuclear substances. Here, NTP submits that despite their smaller size, these facilities should still be required to disclose their ERAs. We understand ERAs to constitute important and helpful ways the public can learn about the ecological footprint of facilities: transparency should be required regardless of whether these footprints are large or small.