COMMENT ON REGDOC 2.10.1

Nuclear Emergency Preparedness and Response

January 20, 2025

SUBMITTED BY NORTHWATCH

Introduction

In July 2023 the Canadian Nuclear Safety Commission announced through “Stream 2: Regulatory Policy Dialogue of the Indigenous and Stakeholder Capacity Fund” that there would be a consultation on a discussion paper related to REGDOC-2.10.1, Nuclear Emergency Preparedness and Response, and that the discussion paper would be available on the CNSC’s online consultation platform, *Let’s Talk Nuclear Safety*, in fall 2023. Based on that limited information, Indigenous Nations and communities and stakeholders were invited to apply for participant funding by August 21, 2023.

On October 11, 2024 the Canadian Nuclear Safety Commission announced that a new version (version 3) of regulatory document REGDOC-2.10.1, Nuclear Emergency Preparedness and Response was open for consultation. The notice described the regulatory document as setting out requirements and guidance for developing emergency measures and being intended for licensees and licence applicants of Class I nuclear facilities and uranium mines and mills. The notice further stated that the REGDOC focuses on preparations and plans for responding to a nuclear emergency in order to protect workers, the public and the environment. It also indicated that previous versions of the document and the history of previous changes can be found on the CNSC website. Comments were to be submitted by December 10, 2024, but the deadline was later extended to January 20th.

Northwatch’s Interests

Northwatch is a public interest organization concerned with environmental protection and social development in northeastern Ontario. Founded in 1988 to provide a representative regional voice in environmental decision-making and to address regional concerns with respect to energy, waste, mining and forestry related activities and initiatives, we have a long term and consistent interest in the nuclear chain, and its serial effects and potential effects with respect to northeastern Ontario, including issues related to uranium mining, refining, nuclear power generation, and various nuclear waste management initiatives and proposals as they may relate to or have the potential to affect the lands, waters and/or people of northern Ontario.

Northwatch's region of northeastern Ontario is "host" to the world's largest uranium refinery, to over 200 million tonnes of acid generating radioactive tailings waste at now closed uranium mines, has been repeatedly investigated as potential locations for low level radioactive waste transfers, has been repeatedly investigated as potential locations for the burial and abandonment of high level nuclear fuel waste, and is currently the transportation route nuclear industry’s selected site for a proposed deep geological repository for all of Canada's high level nuclear fuel waste.

Northwatch has a dual mandate that includes public interest research, education and advocacy to promote environmental awareness and protection of the environment, and support and promotion of public participation in environment-related decision-making.

Key Concerns

In addition to our general review and commentary on the draft regulatory document (see section-by-section review later in this document), there are several areas of key concern, including:

- Inadequate address of transportation-related emergency planning and response
- Division of roles and responsibilities among federal agencies
- Information and training for First Responders
- Inclusion of the public and Indigenous people in emergency planning
- Timely dissemination of information to the public

These areas of concern relate to Northwatch's interests and stem from our review of the draft *Nuclear Emergency Preparedness and Response-Draft for Consultation, REGDOC-2.10.1, Version 3.* Northwatch's review was supported by a report developed by Ecovision which is included as Appendix 1 and which Northwatch adopts in its entirety; certain findings from that report are presented in this section of Northwatch's submission but we commend the report in full as relevant to this review.

The premises underlying the Ecovision review are that reformed CNSC's nuclear emergency preparedness and response regulations should:

- Ensure *comprehensiveness* in regulation of emergency preparedness and response planning by licensees;
- Ensure *consistency with other federal emergency preparedness laws*, whether managed or coordinated by Governor in Council, Public Safety Canada or Transport Canada with respect to coordination and public engagement;
- Incorporate *best practices* in emergency preparedness and response from other authorities in Canada or the United States; and
- Respond to *changes in Canadian law* such as with respect to reconciliation with Indigenous peoples.

We wholly support those stated expectations of a revised REGDOC 2.10.1, and the same report's findings which identified several regulatory gaps and deficiencies such as with respect to:

- Clarity regarding the federal coordination lead to respond to nuclear emergencies with impacts outside a CNSC-licenced facility;
- Financial capacity of licensees to respond immediately to emergencies;
- Public engagement in emergency preparedness and response planning;
- Consistency with *United Nations Declaration of Rights of Indigenous Persons Act;* and

- Independent professional and public engagement in the validation and oversight of emergency preparedness and response plans.

We also adopt the Ecovsion report recommendations that amendments to REGDOC-2.10.1 Version 3 which are presented – along with additional recommendations from Northwatch – in the conclusions section of this report.

Northwatch's review has also been supported by a paper titled "*Navigating the Legal Landscape: The Right to Know about Toxic Substances in Canada*" prepared by Legal Advocates in Natures Defence in March 2024 and by a regulatory scan undertaken by Dr. Rachel Western of comparable practices in the United Kingdom in January 2024, as well as previous work undertaken by Northwatch with respect to transportation risk, public information programs, and emergency planning and response.

Transportation Emergencies

The draft revision of REGDOC 2.10.1 does not include a single reference to transportation, even for the purpose of cross-reference or explanation.

Section 6 (e) of the Class I Nuclear Facilities Regulations sets out what is required for an application for a licence to operate a Class I nuclear and includes that the application "*shall contain the following information in addition to the information required by section 3: the proposed procedures for handling, storing, loading and transporting nuclear substances and hazardous substances*" indicating that transportation of nuclear substances related to the operation of the facility is part of the facility's operation.

REGDOC 2.10.1 seeks to rely on REGDOC 2.3.3 Accident management for accident management and the definition of a beyond-design-basis initiating event in REGDOC 2.3.3 includes transport accidents and the general requirements set out in section 3.2 include transport to storage (although by context it may be that this intends to refer to only onsite storage, but as worded it refers to transport to storage more generally, including to off-site storage).

So while the draft regulatory document 2.10.1 describes itself as addressing accidental radiological releases from Class 1 facilities and while Class I Nuclear Facilities Regulations includes transporting nuclear substances as part of operations and while REGDOC 2.3.3 Accident management includes transportation accidents, REGDOC 2.10.1 fails to address emergency preparedness and response to transportation accidents.

The regulatory document approach of the CNSC presents as providing direction and guidance to licensees at an operation level, including in areas of shared jurisdiction, such as the transportation of radioactive materials. Therefore, it is incumbent upon the CNSC to expand this regulatory document to directly include transportation-related emergency planning and response.

Federal Roles and Responsibilities

Numerous agencies and authorities including Health Canada, Transport Canada, Public Safety Canada, the Canadian Nuclear Safety Commission and provincial and territorial governments all have direct responsibilities and authorities in administer or delivery the Acts, regulations and plans related to nuclear operations and nuclear emergencies and response.

While section 1.5 of REGDOC 2.10.1 lists only legislation that governs the CNSC and its licensing and regulatory processes, the REGDOC would have more appropriately discussed and described the relevance and relationship of REGDOC 2.10.1 to other key areas of legislation and regulation, including but not limited to statutes and regulations administered by Transport Canada, Public Safety Canada and the provinces and territories, such as:

- Nuclear Liability and Compensation Act
- Transportation of Dangerous Goods Act
- Emergencies Act, and Emergency Management Act.
- Packaging and Transport of Nuclear Substances Regulation
- Transportation of Dangerous Goods Regulations
- Federal Emergency Measures Plan
- Federal Nuclear Emergency Plan, and
- Provincial nuclear emergency plans

The statement in Section 2.1 of REGDOC-2.10.1 Version 3 that "Federal authorities would be provided emergency planning information through the CNSC" suggests that CNSC is asserting exclusive authority to direct the response of licensees even in case of a severe accident with impacts outside the boundaries of CNSC-licensed facilities. Our analysis has not persuaded us that this is the case.

Our review raises following questions: In the event of a severe nuclear accident with impacts outside the boundaries of a CNSC-licenced facility, who has lead authority at the federal level (acknowledging that the provinces have direct responsibility) for nuclear emergencies? For example, is it the Minister of Public Safety and Emergency Preparedness or is it the CNSC that have lead authority to coordinate and direct the federal response?

As noted in the Ecovision report commissioned by Northwatch (see Appendix 1) there is no Canadian federal agency with statutory authority paralleling that of the U.S. Federal Emergency Management Agency to direct, manage and fund responses to emergencies.

In the absence of a Canadian equivalent to FEMA, it seems reasonable to amend REGDOC-2.10.1 Version 3 to require CNSC licensees to provide information to, report to, and take direction from the Minister of Public Safety and Emergency Preparedness in the event of a

declared public welfare emergency or in the case of any severe nuclear incident with impacts outside a CNSC-licensed facility for which no national emergency has yet been declared.

First Responders

There are multiple references to offsite authorities and a majority of these discuss the provision of notice of information to these offsite authorities. While these offsite authorities could potentially include First Responders, from the context this seems unlikely.

In contrast, there are only two references to First Responders, both found in Section 2.4. In the first instance the text directs the licensee to "provide educational materials for any person who would be responding to the emergency on behalf of an offsite authority, not just the first responders" and in the second it provides guidance that "Licensees should provide necessary training to individuals and/or organizational units to assure and demonstrate they are qualified and able to completely fulfill their assigned emergency response roles. The training is intended for any person who would be responding to the emergency on behalf of an offsite authority and is not solely limited to first responders."

One of Northwatch's primary concerns related to nuclear operations and the transportation of nuclear materials is the risk to First Responders, who may lack adequate information and training, and therefore be at greater risk as a result.

With the support of the Ontario Law Foundation, Northwatch conducted an investigation during 2017 and 2018 of the information needs of small municipalities, volunteer fire fighters and First Responders around emergency response / right to know issues in the case of accidents and unintended releases related to the transportation of hazardous goods more generally and with respect to the transportation of radioactive materials and response to accidents and accidental releases in particular.

The following observations are a summary of responses from front line responders:

- The range of experiences and outlooks varies greatly among firefighters, both within a particular service, but even more so between the professional forces and the volunteer forces; further differences are in evidence between volunteer fire services in organized municipalities versus unorganized townships (with Local Service Boards)
- Volunteer forces generally appear to rely more on in-house training and passing expertise from senior more experienced members to younger members, while municipal forces appeared to rely more on formal training; that taken into account, respondents from both types of forces described some members as being more specialized, including in the area of responding to situations involving hazardous materials

- Particularly for volunteer forces, time constraints were noted as the key challenge in expanding training; force members regularly do three hours a week of training and equipment maintenance, outside of response to fire calls
- First responders consistently identified the Emergency Reference Guide 2018 as their primary information source for identifying hazards and developing appropriate responses
- There is a specific training module related to transportation, and most on the force would have Level 1 of this training which addresses how to read the truck placard and response accordingly; in situations where hazards are unknown, likely approach for volunteer forces would be to secure the site and invoke the Mutual Aid Agreement to bring in support from a larger community with more specialized expertise, or from professional hazmat team
- Respondents indicated that there is no training provided specific to radiological events, with the exception of several pages in the Emergency Reference Guide

During Northwatch's engagement with First Responders the 2018 Emergency Response Guidebook was frequently referred to as the go-to resource when responding to a hazardous materials event. The Emergency Response Guidebook had now been updated to the Emergency Response Guidebook (ERG) 2024.

The 392-page guide is largely a listing of materials with relatively general instructions in how to respond in a fire situation. Eleven pages deal with six different groupings of radioactive materials, ranging from low level to high level (in terms of radioactivity) and including wastes, fissile material, and uranium hexafluoride.

Disconcertingly, each of the six sections begins with the statement "Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases."

The descriptions go on to say that undamaged packages are safe, that the materials are seldom flammable and that the "presence of radioactive material will not influence the fire control processes and should not influence selection of techniques".

The key difference between the 2016 version of the handbook and the 2024 version is that under "Public Safety" direction to "CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first" has been replaced with the direction to "CALL 911" followed by the direction to call the emergency response number on the shipping paper.

On May 25, 2024 Northwatch submitted an Access to Information Request to Transport Canada requesting information with respect to the 2024 Emergency Response Guidebook and its treatment of Class 7 materials, including:

- the scientific or technical references, information or material relied upon to support the statement "Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases" as it appears in Guides 161 through 166

- the scientific or technical references, information or material relied upon to support the statement “Undamaged packages are safe” as it appears in Guide 162, Guide 163, Guide 164 and Guide 165
- the scientific or technical references, information or material relied upon to support the statement “Released radioactive materials or contaminated objects usually will be visible if packaging fails” as it appears in Guide 162
- the scientific or technical references, information or material relied upon to support the statement “Some material may be released from packages during accidents of moderate severity but risks to people are not great” as it appears in Guide 162
- the scientific or technical references, information or material relied upon to support the statement “Some material may be released from packages during accidents of moderate severity but risks to people are not great” in the context of the statement “Some radioactive materials cannot be detected by commonly available instruments” as it appears in Guide 162
- the scientific or technical references, information or material relied upon to support the selection of a distance of a 300 metre evacuation distance in all directions when radioactive materials with Low to High Levels of External Radiation are involved in a major fire, as set out in Guide 164
- the scientific or technical references, information or material relied upon to support the statement “Radioactive source capsules and Type B packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800°C (1475°F) for a period of 30 minutes” as set out in Guide 164, including documentation of actual tests that have been carried out on packages in Canada, including test or trials during which packages were subject to the total engulfment in flames at temperatures of 800°C (1475°F) for a period of 30 minutes; specifically, provide documentation of when and where such tests or trials took place and which packages were the subject of such tests or trials and how the results of these tests or trials demonstrated that the packages remained fully intact without any loss of containment
- a record of consultation by Transport Canada with Environment Canada and Health Canada during the course of the review of the Guidebook between 2020 and 2024 related to its revision and subsequent publication as the 2024 Emergency Guidebook

On June 26, 2024 Northwatch received a response from Transport Canada, largely comprised of emails between Transport Canada and CNSC staff in 2018, documenting that Transport Canada had inquired if CNSC had any concerns or suggested modifications to the ERG. The response was that CNSC had no concerns or suggested modifications.

The response included one email from Transport Canada to the U.S. Department of Energy referencing a June 2017 meeting in which it had been commented that the suggested distances in the IAEA Guidelines for emergency responders are supposedly different than the ones listed in ERG 2016, but that the IAEA recommendations published in 2002 quoted ERG 2000.

No information was included in the Transport Canada reply citing scientific or technical references, information or material relied upon to support the statement the several statements refenced in our Access to Information Request.

This finding strongly supports Northwatch's contention that First Responders must be provided with detailed and fact-based information about radiological risks, how to minimize their exposure, and how to most appropriately respond.

REGDOC 2.10.1 is the appropriate vehicle for delivering direction to licensees that such training and information sharing must be provided, and to set out that the training and information materials must be publicly available, and the licensee must invite and consider public feedback on the appropriateness and adequacy of the training approach and information materials.

Public Input into Emergency Plans

The REGDOC stipulates that licensees shall develop and maintain emergency response (ER) plan(s) with supporting emergency response procedures and sets out the planning basis and subjects for inclusion. The guidance section sets out that plan content can be variable and facility specific. What the regulatory document fails to do is direct the licensees to include the public in the review, development and updating of emergency plans or in their verification.

This is contrast to the approach in the U.S., where the the *Emergency Planning and Community Right-to-Know Act of 1986* ("EPCRA") purposes include ensuring transparency about hazardous chemicals and their risks in communities and empowering local governments, first responders, and the public to prepare for and respond effectively to chemical emergencies.

Overall, REGDOC-2.10.1 Version 3 includes requirements for licensees to provide "information out" to communities and the public but does not require licensees to consult on an ongoing basis with the public or local community in preparing emergency response programs nor does it mandate public or community right-to-know provisions.

EPCRA, on the other, mandates establishment of local multistakeholder committees to engage in emergency preparedness and response planning as well as serve as a vehicle for informing the local public about chemical and radioactive hazards relating to a facility.

REGDOC-2.10.1 Version 3 could be revised to require licensees to organize local emergency planning committees composed of representatives of governments, first responders, Indigenous and civil society groups to participate in the planning and monitoring of emergency preparedness and response programs by licensees in order to ensure ongoing public awareness of and engagement in emergency preparedness and response. Under Canada's constitution, a federal regulation clearly could not require the establishment of a provincial nuclear emergency committee. However, establishment and support of local nuclear emergency planning committees could be mandated to nuclear facility operators, with committee members serving in an advisory

capacity to the licensee. Members of such local nuclear emergency planning committees would serve voluntarily at the direction of the government or other stakeholder group they represent.

Public Information

Particularly in section 2.2.5, there are several references to communicating with offsite authorities, but no direction is provided with respect to the communication of the emergency to the public. For example, the section outlines in various ways that information is to be communicated to offsite authorities, including when public protective actions are required and when venting is to take place, and safety-critical plant data information is to be communicated to the CNSC Emergency Operations Centre, but there is no address of the need to provide public notice about the risks or protective measures that the public could take to protect themselves; there is no direction included in this section that would result in the public being informed of the emergency and emergency responses that are underway, so they can undertake whatever protection actions may be at their disposal.

As noted above, the U.S. *Emergency Planning and Community Right-to-Know Act of 1986* ("EPCRA") is aimed at improving public knowledge and safety. This legislation as it applies to community right-to-know also requires facilities to immediately notify appropriate authorities (SERCs and LEPCs) if there is a release of a hazardous substance that exceeds specified thresholds, which notification is to includes information on the type of chemical, quantity released, and potential health risks.

Similarly, the U.K. Office of Nuclear Regulation's May 2023 directions for preparing an emergency plan[1] requires that the information set out in the plan covers communications to people at the scene;

- The local authority;
- The emergency services; and
- Others identified in the plan. For example, communications with the media and through social media need proactive planning to ensure the public receive relevant facts at the appropriate time. (underlined for emphasis)

The U.K's Nuclear Emergency Planning and Response Guidance - Concept of Operations (2015) further sets out that specific considerations that will need to be taken into account when in response to a radiation emergency:

> *Effective Communication. While effective communication is important in any emergency situation, it is of paramount importance in a radiation emergency. This is not only to ensure that factually correct and informative messages are issued to the affected population, but that this is done in an expedient way that minimises the opportunity for partial or erroneous information from ill-informed sources to be used to fill an*

[1] ONR – Five Steps to Transport Emergency Planning – May 2023
https://www.onr.org.uk/media/zz5oxew4/five-steps-transport-emergency-planning.docx

information vacuum. There is a fine balance to be maintained between waiting until critical information is fully validated and assessed, and taking vital opportunities to feed the voracious information appetite that will exist with both the affected population and global news media. Move too quickly and information may subsequently have to be retracted as the situation unfolds, move too slowly and public confidence will be lost and may never be fully regained

Similar provisions should be included in REGDOC 2.10.1 to ensure that the public, local communities and Indigenous people are informed about the potential or the event of radioactive releases into the environment, and are kept informed on a real-time basis as accidents / releases occur and emergency measures and then recovery plans are put in place.

Section-by-Section Review of REGDOC 2.10.1

General Comments

- Page numbering is perplexing; the table of contents is page 9 and section 1 is page 10
- Throughout, document useability would have been improved by a greater use of hyperlinks to key and referenced documents
- Throughout, document useability would have been improved by the inclusion of key definitions preferably within the text, alternatively in the glossary for the document rather than requiring users to refer to REGDOC 3.6 Glossary of CNSC Terminology for definition; for example, the definition of Class I nuclear facilities is fundamental to the review or understanding of the document but is not included

SECTION 1 – Introduction

1.1 Purpose

- The draft revision of REGDOC 2.10.1 does not include a single reference to transportation, even for the purpose of cross-reference or explanation
- Section 6 (e) of the Class I Nuclear Facilities Regulations sets out what is required for an application for a licence to operate a Class I nuclear and includes that the application "shall contain the following information in addition to the information required by section 3: the proposed procedures for handling, storing, loading and transporting nuclear substances and hazardous substances" indicating that transportation of nuclear substances related to the operation of the facility is part of the facility's operation

1.2 Scope

- The document is uneven in its address of emergency preparedness vs emergency response
- The stated goal of the emergency preparedness program (EP program)is to minimize the impacts of any accidental release; accident prevention or release prevention would be more appropriate, but are not stated as primary goals of either this document or of REGDOC 2.3.3 Accident management
- While the document describes itself as addressing accidental radiological releases from Class 1 facilities and the Class I Nuclear Facilities Regulations includes transporting nuclear substances as part of operations, REGDOC 2.10.1 fails to address emergency preparedness and response to transportation accidents
- REGDOC 2.10.1 seeks to rely on REGDOC 2.3.3 Accident management for accident management; the definition of a beyond-design-basis initiating event in REGDOC 2.3.3 includes transport accidents and the general requirements set out in section 3.2 include transport to storage (although by context it may be that this intends to refer to only onsite storage, but as worded it refers to transport to storage more generally, including to off-site storage); while REGDOC 2.3.3 Accident management does not set out management procedures specific to transport, the general directions are presumed to apply to the range

of potential design-basis and beyond-design-basis accidents but REGDOC 2.10.1 provides a more limited interpretation, stating that "Thus, accident management provides capability to respond to an accident within the reactor facility", and seemingly excludes accidents beyond the reactor facility; given that there are Class 1 facilities and operations – including but not limited to transportation – which are not "reactor facilities" this statement is confusing and problematic

- REGDOC 2.10.1 describes the goals of emergency response as being most likely to be achieved with having an effective EP program, but then goes on to muse that an effective EP program "also helps to build confidence that an emergency response would be managed, controlled and coordinated"; while that may be the case, the mixing and matching of safety programs and public relations objectives is problematic

1.3 Accident Management and its links …

- We found *Figure 1: "Accident management (REGDOC-2.3.2) and nuclear emergency preparedness and response (REGDOC-2.10.1) and how they relate to one another"* to be quite unhelpful

1.4 Overview of Canada's nuclear emergency framework

- the document is overly ambiguous on key points, including in areas that require clear definition and standards, including:
    - the statement that "recovery" after a nuclear accident is to be to an "acceptable level" with the level of restoration determined by the "responsible authorities, in consultation with stakeholders" raise many questions:
        - who are the stakeholders?
        - What is the definition of "community" and how does it consider both spatial and land use relationships to the affected area?
        - What is the criteria or basis for developing the "acceptable level"?
        - What are the special and temporal boundaries for determination?

    - The statement that "the CNSC public dose limit would be superseded by generic criteria and operational intervention levels documented in provincial and territorial emergency response plans" requires supporting information which is not included:
        - What is the "generic criteria"?
        - Is this "generic criteria" standard across emergencies and emergency response plans or variable?
        - How are the resulting dose limits determined and demonstrated to be protective or human health, including of workers, residents and others in the impacted area?
        - How broadly do the "generic criteria" apply, both temporally and spatially?

- Some statements are poorly phrased and so are difficult to understand, such as "*In Canada that the offsite authorities determine the size of EPZs, however regardless of the chosen size of EPZs, the requirements for emergency planning will be based on the facility's planning basis on the potential offsite impacts*."

1.5 Relevant Legislation

- This section lists only legislation that governs the CNSC and its licensing and regulatory processes; more appropriately, this section would have discussed and described the relevance and relationship of REGDOC 2.10.1 to other key areas of legislation and regulation, including but not limited to statutes and regulations administered by Health Canada, Transport Canada, Public Safety Canada and the provinces and territories, such as:
    - Nuclear Liability and Compensation Act
    - Transportation of Dangerous Goods Act
    - Emergencies Act, and Emergency Management Act.
    - Packaging and Transport of Nuclear Substances Regulation
    - Transportation of Dangerous Goods Regulations
    - Federal Emergency Measures Plan
    - Federal Nuclear Emergency Plan, and
    - Provincial nuclear emergency plans

2.1 Planning basis

- facility safety analysis should include processing buildings, on and off-site transport, and waste storage containers, buildings and areas
- formal review of the planning basis (minimum frequency of five years) should include a process for public notice and public involvement in the review, including but not limited to local residents (notice should be through CNSC distribution system and should be included in a listing of consultation and comment opportunities which can be accessed through a link prominently posted on the CSNC web site and included in a consultation / comment opportunities calendar)
- evacuation time study to be conducted by an independent 3rd party every five years should include a public component, with the public having an opportunity for review and input both as part of the review process and as comment on the draft study report (notice should be through CNSC distribution system and should be included in a listing of consultation and comment opportunities which can be accessed through a link prominently posted on the CSNC web site and included in a consultation / comment opportunities calendar)
- the statement "Response to criminal and malicious activity may be dealt with under a separate program" is overly ambiguous; there is a known public concern about the risk of malevolent acts against nuclear facilities and the attendant elevated risk of unintended radiological releases; while some discretion may be required for security purposes, there

must be a level of transparency and openness about the "response" to allow the public to satisfy their concern that there is a robust plan in place and appropriate measures will be implemented

- the document states that "PSA information and insights should be used with DSA, engineering evaluations and defence in depth capabilities as inputs in the decision-making process to determine the appropriately sized EPZ" but is silent on the decision-making process being referenced, including on how the public and Indigenous people are to be included or involved in that decision-making process; public and Indigenous engagement is essential, but the public has found it challenging in the past to access documents supporting or setting out the basis for deterministic safety analysis (DSA) and probabilistic safety analysis (PSA); public and Indigenous engagement in the decision-making process to determine the appropriately sized EPZ is essential and the means to achieve and enable that engagement must be set out in the REGDOC itself in the interest of certainty and accountability
- the Guidance that "The ER plan, which may consist of one or several documents, incorporates pertinent information directly or by reference. Plan content can vary to accommodate facility-specific needs and circumstances based on risk" is overly ambiguous; correction, at least in part, would include:
    - clear direction that documents incorporated by reference must be summarized in the ER plan, with full titles/sources, section references, and hyperlinks included in the plan
    - the statement that contact can vary "based on risk" is of concern; the REGDOC must provide consistency and transparency, which would require a more detailed explanation and description, preferably with quantifiable thresholds
- the statement that "Members of mobile offsite survey teams *need not be accounted for* as part of the minimum complement for facilities …." given that the REGDOC does not stipulate any minimum complement for facilities

<u>2.2.2 Emergency response facilities and equipment</u>

- the document is overly ambiguous on the criteria to be used or the basis of determining where emergency response facilities would be located and how many are required
- the document states that all licensees will "have an ERF located offsite and outside of the plume exposure planning zone" but we found no instruction on how the plume exposure would be determined or at what point in time it would be determined or on what evidentiary basis;
- we found the specificity of the repeated (throughout the document) requirement that licenses shall "provide a workspace with computer, internet access and telephone for a CNSC representative in each ERF; in addition, the CNSC shall be granted access to install an antenna for a satellite phone at each ERF" to be at odds with the overall vagueness, ambiguity and lack of specificity of the draft regulatory document overall

- as noted above, the document repeatedly states that the CNSC workspace should have appropriate resources (such as computers, information access, internet access and satellite phones) and in section 2.2.2 adds that these are "to enable CNSC representatives to perform their functions adequately" but the document is unclear as to what functions the CNSC would be carrying out, or what would be considered "adequate" in their carrying out of these functions
- The REGDOC states that "The preferred means of ensuring the protection of workers and the continuation of operation is to have hardened facilities that have … radiological protection/shielding"; it is wholly unclear what licensees are required to establish on the basis if this guidance, either in advance of or in response to a nuclear emergency, and raises several questions:
    - How many Class I nuclear facilities have an off-site hardened facility with radiological protection / shielding?
    - How many of those off-site hardened facility are outside the plume exposure planning zone?
    - If any off-site hardened facility are actually already established outside the plume exposure planning zones, what was the siting basis and how is that information available to the public?

2.2.3 Emergency categorization, activation and notification

- this section introduces the term "unusual event" which is not used elsewhere in the document, is not defined in the glossary for the document or in *REGDOC-3.6 Glossary of CNSC Terminology* or in *REGDOC-2.3.2, Version 2 Accident Management;*
    - for greater clarity, the REGDOC should use standard or defined terms, rather than introducing undefined terms for a single use
- Item 3 in the listing of requirements for ER plans and procedures states that the criteria for the activation of the ERFs is to be defined and documented, but should also stipulate that the basis for developing that criteria should be included in the documentation; the decision-making should be traceable and transparent and including the evidentiary basis for criteria is essential, including for post-emergency evaluations
- When guidance directs a license to follow provincial notification categories and criteria it should be explicit, i.e. the source for those categories and criteria should be named, and a hyper-linked source identified
    - Of the four event types listed under "guidance" in this section, only "abnormal incident' is defined in the CNSC glossary
    - The term "general emergency" reads as an understatement for an event during which there is "an ongoing atmospheric emission of radioactive material, or one likely within a short time frame, as a result of a more severe accident

2.2.4 Emergency Assessment Requirements

- The emphasis in the guidance provided in this section seems to be on protection of onsite personnel and equipment rather than on the protection of human health and the environment more generally (we are not suggesting that the former be decreased but that the latter be increased)

2.2.5 Interface and support for offsite response organizations

- there are several references to communicating with offsite authorities, but no direction provided with respect to the communication of the emergency to the public; for example:
    - item 5 sets out that "promptly and regularly provide recommendations to offsite authorities when public protective actions are required and inform the CNSC" but there is no address of the need for communicating the need for protective action to the public
    - item 11 sets out that "when venting forms a part of the facility response strategy" a designated person must be onsite with the authority for venting and offsite authorities and the CNSC are to be consulted before undertaking any venting activity, unless venting must be performed in an urgent manner …." but there is no address of the need to provide public notice as far in advance of the venting activity or that venting has taken place; there is also no indication that Indigenous authorities will be consulted or even notified
    - item 13 sets out that the licensee is to "transmit live predetermined and agreed upon by the CNSC safety-critical plant data for the diagnosis, prognosis, and mitigation of accident conditions, in an agreed-upon format and mechanism with the CNSC, to the CNSC Emergency Operations Centre during a nuclear emergency" which we have no quarrel with, except
        - it appears to be duplication with the several on-site and off-site offices the CNSC requires be established concurrent with the unfolding emergency, and
        - There is no direction included in this section that would result in the public being informed of the emergency and emergency responses that are underway, so they can undertake whatever protection actions may be at their disposal
- The guidance provided in this section again sets out that there must be communication between the site and off-site authorities; but not even a passing mention of communication with local Indigenous authorities or of communication to the public

2.2.6 Emergency Personnel Protection

- the requirement for a public address system ("intelligible one-way communication system") is included in this section, but as CNSC staff will be aware over the years there have been multiple incidents of employees at nuclear generating stations

rendering the public address system dysfunctional through mischief activities; given this, a testing rotation of every three months is too long, and allows too great an opportunity for mischief and malevolent acts which may seem minor but could be extremely serious in the case of a major emergency; testing should be on a weekly basis, and increased to daily for at least a thirty day period following any mischief event which impaired the function of the public address system

- the direction that licensees should "develop and document emergency radiation protection measures that align with their radiation protection program" is circular; radiation protection measures should align with sound science and the protection of human health
- to simply "document the criteria for determining in what circumstances the effective and equivalent dose limits set out in section 15 of the Radiation Protection Regulation apply, including when they take effect and cease to apply" is inadequate; the direction must include:
    - the criteria must be specific to each varied circumstance
    - the criteria must be supported by sound technical assessments
    - the criteria must be subject to public review and scrutiny, including after each and any application
    - the criteria development must be supported by independent third-party review
    - the decision-making process for each instance in which Section 15 dose limits were applied must be documented in detail and subject to post-emergency analysis and review; this review must be public and transparent
    - each instance in which Section 15 dose limits were applied must be followed with a tracking study of workers and members of the public who received a dose exceeding the regular dose limits; this tracking study must be continued for a twenty-year period and funded by the licensee

TABLE

	Column 1	Column 2	Column 3
Item	Action	Effective dose (mSv)	Equivalent dose to the skin (mSv)
1	Actions to minimize dose consequences, for members of the public, associated with the release of radioactive material	100	1 000
2	Actions to prevent health effects of radiation that are fatal or life-threatening, or that result in permanent injury	500	5 000
3	Actions to prevent the development of conditions that could significantly affect people and the environment	500	5 000

Figure 1: Radiation Protection Regulation, Section 15

- the guidance provided in this section speaks primarily to the protection of site personnel and secondarily to off-site emergency responders but neglects the public in the vicinity of the site
- in setting out the guidance with respect to "*documenting the process by which the effective dose and equivalent dose received by and committed to persons participating in the control of an emergency remain as low as is reasonably achievable, social and economic factors being taken into account*" the economically driven qualifier of "*social and economic factors being taken into account"* should be removed and the effort – and its documentation – should be focussed on keeping doses as low as achievable

- the guidance in this section is focussed on the period during an emergency response; while ensuring that emergency responders and external organizations providing onsite support have protection and information, and interfacing with offsite responders to ensure that pertinent hazardous material and radiological information is provided to medical staff and informing persons other than nuclear energy workers responding to an emergency of the associated risks are all sound measures, these are not measures that can be left until the time of an actual emergency; we found no direction in the REGDOC that licensees or authorities would ensure that such information was shared in advance of an emergency or that off site responders and medical staff are well informed and supported in their roles as responders and care-providers prior to emergencies and on an ongoing basis

2.2.7 Public emergency information

- the 184 word discussion which comprises the section of this regulatory document directing public information is inadequate
- the section repeats from earlier sections that the licensee will provide information to offsite authorities and for the first time communicating information to the public is identified, but no direction is provided, other than to say that the licensee will "coordinate with offsite authorities when communication information to the public"; that suggest that the greater concern is about vetting information than it is about providing information
- The guidance section repeats that there is to be communication with offsite authorities and additionally sets out that "Licensees should describe the protocols to ensure coordinated public communications during an emergency" and nuclear power plants "should include consideration of communications strategies and describe the roles and responsibilities of organizations that are responsible for communicating key information to the public" but there is no guidance in the REGDOC that indicates that the public should be informed early, should have access to information about emergencies and radiological releases in a timely manner, or that the public has a right not know how they may be affected and what actions they can take to protect themselves and their families

2.2.8 Validation of the emergency response plan and procedures

- the requirements to validate emergency response plans and procedures should include a) a timeline for the development and validation of the plans and procedures; b) a clear description of the process for validation and the parties involved; c) a statement about the frequency for review of the plan and procedures, and d) a clear statement about public access and comment with respect to the plans and procedures and the engagement of Indigenous people in the review and approval

2.3 Recovery plan

- the requirements to prepare a recovery plans should include a) a timeline for the development and validation of the recovery plan(s); b) a clear description of the development process c) a clear statement about public access and comment with respect to the plan(s) and the engagement of Indigenous people in the review and approval
- the revised REGDOC should clarify the terms strategic recovery plan, conceptual recovery plan and final recovery plan and set out how the three plans differ or overlap in development, content and application

2.4 Training and qualification

- this section sets out that the licensee shall "provide educational materials for any person who would be responding to the emergency on behalf of an offsite authority, not just the first responders" but requires additional clarification, including but not limited to:
    - description of the education materials to be provided
    - clarification of who will deliver the education material and on what rotation (quarterly? Annually?)
    - identification of who will receive the educational materials, and how it will be tailored to their particular role and their capacity

2.5 Readiness

- these sections read as if all scenarios are nuclear generating stations and all environments are urban

2.5 Public Preparedness

- this section read as if all scenarios are nuclear generating stations and all environments are urban

Conclusions

As set out in earlier sections of this report, REGDOC 2.10.1 requires considerable revision. These revisions are necessary to achieving the following objectives:

- Ensuring *comprehensiveness* in regulation of emergency preparedness and response planning by licensees;
- Ensuring *consistency with other federal emergency preparedness laws*, whether managed or coordinated by Governor in Council, Public Safety Canada or Transport Canada with respect to coordination and public engagement;
- Incorporating *best practices* in emergency preparedness and response from other authorities in Canada or the United States; and
- Responding to *changes in Canadian law* such as with respect to reconciliation with Indigenous peoples.

To achieve the above, revisions to REGDOC 2.10.1 include but are not limited to the following:

1. Revise the document for consistency and clarity of terminology, including definitions in the glossary included in the REGDOC.
2. Expand the scope of REGDOC 2.10.1 to explicitly address and include transportation-related emergencies both on and offsite, including transportation accidents and emergencies where the carrier is transferring radioactive materials from one Class 1 facility to another facility.
3. Revise the document to make it more explicit that the goal is to minimize the impacts of any accidental release, including through accident prevention and /or release prevention.
4. Revise the document to make it explicit that the priority is protection of human life and the environment during a nuclear accident or emergency or in the case of a related release, and this priority will not be undermined by the ALARA principle (as low as reasonably achievable) being balanced against and undercut by "social and economic factors being taken into account".
5. Expand the sections detailing the various roles and responsibilities of various federal and provincial authorities, clarifying where the greatest authority resides and in which direction authority flows between the various federal entities.
6. Require CNSC licensees to provide information to, report to, and take direction from the Minister of Public Safety and Emergency Preparedness in the event of a declared public welfare emergency or in the case of any severe nuclear incident with impacts outside a CNSC-licensed facility for which no national emergency has yet been declared.

7. Require CNSC licensees to submit a budget for emergency preparedness and response as part of their emergency preparedness program and to establish an immediately accessible fund for such a program.
8. Require licensees to organize local emergency planning committees composed of representatives of governments, first responders, Indigenous and civil society groups to participate in the planning and monitoring of emergency preparedness and response programs by licensees in order to ensure ongoing public awareness of and engagement in emergency preparedness and response.
9. Require licensees to engage local Indigenous communities directly to obtain the free, prior and informed consent of these communities prior to approval of any emergency preparedness program.
10. Require licensees to engage independent professionals or local emergency preparedness committees such as those mandated under the U.S. EPCRA as part of the validation process for emergency preparedness and response plans.
11. As part of this review of REGDOC 2.10.1, invite feedback on the comments received as per the standard process for REGDOC reviews, followed by the convening of a workshop to review and consider comments and feedback before issuing a revised draft for a final round of comments as part of the current review process.

APPENDIX 1

Nuclear Emergency Preparedness and Response
Regulatory Document REGDOC-2.10.1 Version 3

Regulatory Review and Best Practice Provisions in Other Laws

December 3, 2024

ecovision

Nuclear Emergency Preparedness and Response Regulatory Document REGDOC-2.10.1 Version 3:

Regulatory Review and Best Practice Provisions in Other Laws

December 3, 2024

1. Introduction

This report reviews the proposed Nuclear Emergency Preparedness and Response Regulatory Document ("REGDOC-2.10.1 Version 3") to identify regulatory gaps and deficiencies and outline "best practice" provisions from other federal Canadian and United States laws that could be adapted for inclusion in revised nuclear preparedness and response regulations.

The report was commissioned by Northwatch to inform its submission to the Canadian Nuclear Safety Commission ("CNSC") in the current national consultations on REGDOC-2.10.1 Version3.

The approach taken is to review REGDOC-2.10.1 Version 3 and identify regulatory gaps and deficiencies that could be addressed by amendments. Canadian and American federal statutes and regulations relevant to nuclear emergency preparedness and response are summarized in sections 3 and 4 respectively. Sections 5 through 9 identify regulatory opportunities to better protect public health and safety and the natural environment through amendments to REGDOC-2.10.1 Version 3, in some cases through adoption of best practices in other laws. Section 10 sets out conclusions and recommendations for amendments to REGDOC-2.10.1 Version 3 for Northwatch to consider in preparing its submission to the Canadian Nuclear Safety Commission.

The overarching theme of the report is to assess the level of regulatory rigour in the emergency preparedness and response regime proposed in REGDOC-2.10.1 Version 3 with respect to protection of public health and safety and the natural environment.

The premises underlying the review are that reformed CNSC's nuclear emergency preparedness and response regulations should:

- Ensure *comprehensiveness* in regulation of emergency preparedness and response planning by licensees;
- Ensure *consistency with other federal emergency preparedness laws*, whether managed or coordinated by Governor in Council, Public Safety Canada or Transport Canada with respect to coordination and public engagement;
- Incorporate *best practices* in emergency preparedness and response from other authorities in Canada or the United States; and
- Respond to *changes in Canadian law* such as with respect to reconciliation with Indigenous peoples.

Specific issues to be explored include statutory and regulatory provisions relating to the following:

- Responsibility for emergency response and coordination with other agencies;
- Capacity of licensees to respond to emergencies;
- Public engagement in emergency preparedness and response planning;
- Consistency with *United Nations Declaration of Rights of Indigenous Persons Act;* and
- Validation and oversight of emergency preparedness and response plans

2. Overview of REGDOC-2.10.1 Version 3

REGDOC-2.10.1 Version 3 addresses the obligations of CNSC licensees to implement and consider when establishing an Emergency Preparedness program ("EP program") to prepare for, respond to, and recover from the effects of accidental radiological/nuclear and/or hazardous substance releases from Class I nuclear facilities or uranium mines or mills. REGDOC-2.10.1 Version 3 refers primarily to nuclear events, but the planning basis must also address releases of hazardous materials.

Under s. 2, the EP program must address preparedness, response, and recovery functions under the following categories: planning basis, emergency response plan and procedures, recovery plan, training and qualification, readiness, public preparedness, and program management.

3. Canadian Federal Nuclear Emergency Preparedness and Response Law

This section summarizes the federal statutory and regulatory framework governing nuclear emergency preparedness and response. Three federal agencies (i.e., Canadian Nuclear Safety Commission, Transport Canada, Public Safety Canada) as well as the Governor in Council share the principal responsibilities for nuclear emergency preparedness and response.

Statutes administered by these agencies include: *Canada Nuclear Safety and Control Act, Nuclear Liability and Compensation Act, Transportation of Dangerous Goods Act, Emergencies Act, and Emergency Management Act*. Regulations promulgated under these statutes include: Class I Nuclear Facilities Regulation, General Nuclear Safety and Control Regulation, Packaging and Transport of Nuclear Substances Regulation, and Transportation of Dangerous Goods Regulations. Relevant federal plans and guidelines tht are summarized include: Federal Emergency Measures Plan, Federal Nuclear Emergency Plan, and Severe Accident Management Guidelines.

Statutes and Regulations

Canada Nuclear Safety and Control Act ("NSCA") is the primary legislation governing regulation of nuclear activities in Canada. Key purposes of the legislation are to regulate the development, production, possession, use, and transportation of nuclear substances, equipment, and facilities and to prevent unreasonable risk to health, safety, and the environment. The Canadian Nuclear Safety Commission is established as the independent regulatory agency responsible for overseeing and enforcing the Act by issuing licenses, conducting inspections, enforcing compliance and regulating emergency preparedness and response by licensees. All nuclear-related activities require licensing from the CNSC.

Class I Nuclear Facilities Regulation under the NSCA requires large nuclear facilities such as nuclear power plants and uranium mines to obtain a license from CNSC at various stages of their lifecycle. Class I facilities are required to comply with safety standards covering radiation protection, emergency preparedness, waste management, and physical security. Facilities are required to develop robust emergency response plans, including coordination with local and national authorities and conduct regular drills and training to prepare for potential incidents. Facilities are required to communicate with local communities about risks and safety measures

General Nuclear Safety and Control Regulation **u**nder the NSCA establishes the regulatory framework for nuclear safety, security, and control, setting out rules relating to licensing, compliance, and enforcement. The Regulation applies to all activities involving nuclear substances, facilities, prescribed equipment, and sources of radiation and requires license applicants to provide information on their emergency preparedness plans and report on accidents or malfunctions that could lead to radiation exposure or environmental harm.

Packaging and Transport of Nuclear Substances Regulations under the NSCA sets standards for the safe packaging, transport, and handling of nuclear substances aligning with international guidelines such as those of the International Atomic Energy Agency. The regulations apply to all aspects of the packaging, transport, and handling of nuclear

substances within Canada, setting rules categorizing nuclear substances, establishing packaging, labelling and, documentation standards, setting limits on radiation exposure levels, and transportation security and pre-notification requirements to the CNSC for certain shipments. Shippers and carriers are required to have emergency response plans in place and immediately report incidents such as leaks, loss or theft.

Nuclear Liability and Compensation Act sets out the framework for addressing liability and compensation in the event of a nuclear accident, establishing responsibilities of nuclear operators and providing for compensation to those affected. Nuclear facility operators are liable for damages resulting from nuclear incidents regardless of fault (i.e., absolute liability). Only nuclear facility operators are liable under the legislation, preventing claims against contractors or suppliers. Nuclear facility operators are required to maintain insurance or financial security up to a specified amount to cover potential liabilities.

Transportation of Dangerous Goods Act ("TDGA"*)* is administered by Transport Canada and regulates transportation of hazardous materials to protect public safety and the environment. The TDGA applies to the transportation of dangerous goods by road, rail, air, or marine. The TDGA classifies dangerous goods into nine hazard classes, one of which is radioactive substances, and sets documentation, labelling and packaging standards for such goods. The TDGA requires companies transporting certain dangerous goods in large quantities to have an Emergency Response Assistance Plan approved by Transport Canada. Accidents, spills, or other incidents involving dangerous goods must be reported promptly to the relevant authorities.

Transportation of Dangerous Goods Regulations under the TDGA classify dangerous goods according to the hazard level: Radioactive materials are in Class 7. Packaging, labelling, documentation and safety marks for the classes of hazardous goods are prescribed in the Regulations. The Regulations detail requirements for approval of Emergency Response Assistance Plans and procedures for dealing with potential incidents.

Emergencies Act provides the Governor in Council ("federal Cabinet") with extraordinary powers to respond to national emergencies such as public welfare emergencies (e.g., natural disasters, public health crises). The Act can be involved only if the situation cannot be managed effectively under existing laws and the threshold test that the emergency

threatens the security, sovereignty, or safety of Canadians has been met. When invoked, the Act allows the government, inter alia, to regulate or prohibit activities contributing to the emergency and authorize emergency funds or resources.

However, a January 2024 Federal Court of Canada decision reinforces the stringent requirements for invoking the *Emergencies Act* as a tool of last resort.[2] The court held that federal invocation of a national emergency during the February 2022 "Freedom Convoy" protests was unreasonable in that the Convoy protests did not pose a threat to the security of Canada that provincial and municipal authorities could not manage. A consequence of this decision may be that the Governor in Council in future is reluctant to declare a national emergency in case of a severe nuclear incident.

Emergency Management Act provides the legal framework for a coordinated approach to management, including preparedness and response, for emergencies that fall under federal jurisdiction (e.g., nuclear energy). The Act gives the Minister of Public Safety responsibility for exercising leadership relating to emergency management in Canada by coordinating, among government institutions and in cooperation with the provinces and other entities, emergency management activities. The Act requires federal institutions to develop emergency management plans for risks under their authority and encourages collaboration between federal, provincial, and territorial governments to ensure a unified response. The Act provides the government with powers to take necessary actions during emergencies declared under the *Emergencies Act*.

Plans and Guidelines

Federal Emergency Measures Plan sets out the framework for coordinating responses to emergencies that require federal involvement and outlines how the federal government works collaboratively with other governments to ensure a coordinated and integrated federal response to emergencies. The Plan applies to all types of emergencies, including nuclear incidents. Specific federal departments and agencies are responsible for leading responses based on the type of emergency. Provinces and territories lead the initial

[2] *Canadian Frontline Nurses v Canada (Attorney General*) 2024 FC 42 (CanLII).

response to emergencies in their jurisdictions with federal support provided upon request or when a situation escalates beyond local or provincial capacities.

Federal Nuclear Emergency Plan provides the overarching framework for responding to nuclear or radiological emergencies that require federal coordination. The Plan is maintained by Health Canada. In an emergency, the FNEP, with support from the Public Safety Canada, the CNSC and other agencies coordinates the federal emergency response with provincial and municipal government agencies[3]. The Plan's purpose is to provide a coordinated federal response to nuclear and radiological incidents, whether from power plants, transportation accidents, or malicious activities. The Plan is intended to support provinces and territories as the primary responders. The overall federal response is coordinated through the Federal Coordination Centre with agencies such as Health Canada, the Canadian Nuclear Safety Commission (CNSC), and Environment and Climate Change Canada providing expertise and resources.

Severe Accident Management Guidelines provide a framework for nuclear power plant operators to respond to and mitigate the consequences of severe accidents in these plants. The Guidelines complement the plant's Emergency Operating Procedures that address more routine operational challenges. The Guidelines provide systematic instructions to operators and technical support teams focusing on controlling reactor core temperature, managing containment integrity, and minimizing offsite radiological impact. Operators are required to comply with CNSC regulations mandating implementation and periodic review of the Guidelines.

4. United States Federal Nuclear Emergency Preparedness and Response Law

The U.S. Nuclear Regulatory Commission ("NRC") operates under a framework of laws designed to regulate the use of nuclear materials with a view to ensuring safety, security, and environmental protection associated with their use. The President and the Department of Homeland Security also have important legal authority with respect to nuclear emergency preparedness and response. The U.S. federal statutes and regulations most relevant to nuclear emergency and preparedness include: *Atomic Energy Act of 1954, Energy Reorganization Act of 1974, Price-Anderson Act, National Emergencies Act*,

[3] https://www.cnsc-ccsn.gc.ca/eng/resources/emergency-management-and-safety/

Homeland Security Act (2002), and *Emergency Planning and Community Right-to-Know Act*.

Atomic Energy Act of 1954 establishes the legislative foundation for uses of nuclear materials and encourages the development of nuclear energy for peaceful purposes. The Act assigns regulatory authority to the NRC for the use of radioactive materials. One key objective of the Act is to facilitate transparency and public involvement in regulatory decisions. The *Price-Anderson Act* amended the *Atomic Energy Act* to provide a liability framework for nuclear incidents. This *Price-Anderson Act* limits liability for nuclear facility operators and establishes a compensation fund for public damages.

The Act establishes rules regarding the use, ownership, and handling of special nuclear material, source material, and byproduct material. Regulations require that entities obtain licenses to possess, use, or transfer nuclear materials and govern mining, refining, and disposal of source materials such as uranium and thorium.

The Act delegates licensing and oversight of civilian nuclear power plants to the NRC. This oversight includes: design certification and construction permits; requirements for the design, construction, and operation of nuclear facilities; certification for individuals operating reactors; and ensuring compliance with safety protocols**.**

Energy Reorganization Act of 1974 restructured nuclear regulatory oversight by separating regulatory functions from the promotional activities of nuclear energy and providing independent oversight by the NRC of nuclear reactors and materials.

National Emergencies Act sets out a framework to ensure transparency, oversight, and accountability in the use of federal emergency powers and to regulate and limit the President's power to declare national emergencies. Under the Act, the President must formally declare a national emergency through a proclamation with the declaration specifying which emergency powers or statutes are to be invoked. The United States Congress can terminate a national emergency declaration by passing a joint resolution, though such a resolution is subject to presidential veto. The Act requires the President to

report to Congress every six months on the status of the emergency and any actions taken. National emergencies automatically expire after one year unless renewed by the President.

Homeland Security Act of 2002 merged 22 federal agencies, including the Federal Emergency Management Agency ("FEMA"), into a single Department of Homeland Security. The core functions of the Department under the Act are emergency preparedness and disaster response as well as border security and immigration enforcement, and cybersecurity and infrastructure protection. Note that Canada lacks an agency similar to FEMA with authority to direct, manage and fund responses to emergencies (and not just coordinate with other federal, state and local authorities.

Emergency Planning and Community Right-to-Know Act of 1986 ("EPCRA") is aimed at improving public knowledge and safety concerning chemical and radioactive hazards in their communities. Key purposes of EPCRA include: ensuring transparency about hazardous chemicals and their risks in communities; and empowering local governments, first responders, and the public to prepare for and respond effectively to chemical emergencies. This legislation as it applies to community right-to-know is described below in section 7.

5. Responsibility for emergency preparedness and response and coordination

This section addresses clarity of lines of responsibility among federal authorities with respect to emergency and response to a severe nuclear incident with impacts outside the boundaries of a CNSC-licensed facility. Are licensees legally responsible only to CNSC in case of a severe nuclear incident or to the Governor in Council or Public Safety Canada as well?

REGDOC-2.10.1 Version 3 provides an overview of governance responsibilities of the several levels of government with respect to emergency preparedness and response. Section 1.4 notes that "Prevention of nuclear emergencies at Canadian nuclear facilities is the responsibility of the licensees. Through the authority of the *Nuclear Safety and Control Act*, the CNSC regulates the Canadian nuclear industry in order to prevent unreasonable risk to the environment, the health and safety of persons, and national security."

Section 1.4 further observes: “In Canada, the respective roles of the various levels of government in nuclear emergency management are derived from legislated responsibilities. Provincial and territorial governments bear the primary responsibility for protecting public health and safety, property and the environment within their borders and are ultimately responsible for the offsite response and the implementation of protective actions and measures . . . The federal government regulates the peaceful use of nuclear energy in Canada, manages nuclear liability, and supports the responses of provinces to nuclear emergencies within their boundaries.”

“Under the administrative framework of Public Safety Canada’s Federal Emergency Response Plan (FERP) and the Federal Nuclear Emergency Plan (FNEP), all levels of government, along with various agencies and organizations, have responsibilities for developing and implementing emergency plans to address nuclear emergencies with impacts outside the boundaries of CNSC-licensed nuclear facilities.”

Neither the *Emergencies Act* nor the *Emergency Management Act* are explicitly referred to in REGDOC-2.10.1 Version 3. While responsibility to respond to accidental radiological/nuclear or hazardous substance releases at Class I nuclear facilities or uranium mines or mills falls to the CNSC and licensees at first instance, the Minister of Public Safety and Emergency Preparedness also has responsibility under the *Emergency Management Act* for coordinating the federal response to a nuclear-related or other public welfare emergency declared under the *Emergencies Act*.

The Act authorizes the Governor in Council to declare a public welfare emergency where it “believes, on reasonable grounds, that a public welfare emergency exists and necessitates the taking of special temporary measures for dealing with the emergency.”[4] A public welfare emergency is defined as “an emergency that is caused by a real or imminent (a) fire, flood, drought, storm, earthquake or other natural phenomenon, (b) disease in human beings, animals or plants, or (c) accident or pollution and that results or may result in a danger to life or property, social disruption or a breakdown in the flow of essential goods, services or resources, so serious as to be a national emergency.”[5]

[4] S. 6(1) *Emergencies Act*
[5] Ibid s. 5.

As noted above, the Minister of Public Safety and Emergency Preparedness is responsible under the *Emergencies Act* for exercising leadership in Canada relating to emergency management by coordinating among federal government institutions in cooperation with the provinces and other entities. However,

REGDOC-2.10.1 Version 3 prescribes the duties of licensees with respect to emergency preparedness and response as part of the CNSC regulatory framework but does not address duties of licensees with respect to other authorities in the event that an emergency is declared under the *Emergencies Act* or by a provincial or territorial government. The statement in Section 2.1 of REGDOC-2.10.1 Version 3 that "Federal authorities would be provided emergency planning information through the CNSC" indicates that CNSC is asserting exclusive authority to direct the response of licensees even in case of a severe accident with impacts outside the boundaries of CNSC-licensed facilities.

The Minister of Transport also has statutory responsibilities to protect public safety under the *Transportation of Dangerous Goods Act* with respect to emergency preparedness and response for transport-related releases of dangerous goods, including radioactive substances. The Minister is authorized to approve and revoke emergency response assistance plans prepared by a person transporting dangerous goods and to direct "a person with an approved emergency response assistance plan to implement the plan, within a reasonable time as specified in the direction, in order to respond to an actual or anticipated release of dangerous goods to which the plan applies. . . "[6] Presumably the Minister of Transport could make such a direction in the absence of a declaration of a public welfare emergency by the Governor in Council.

This analysis begs the following questions: In the event of a severe nuclear accident with impacts outside the boundaries of a CNSC-licenced facility, does the Minister of Public Safety and Emergency Preparedness or the CNSC have lead authority to coordinate and direct the federal response? Does the answer to this question depend on whether a national emergency has been declared under the *Emergencies Act*? In such a declared public emergency, what legal obligations does the CNSC licensee have—or should have--to the Minister and Public Safety Canada?

[6] *Transportation of Dangerous Goods Act* s.7(1)

The answers to these questions are perhaps at least partly beyond the scope of this review of REGDOC-2.10.1 Version 3. As noted above there is no Canadian federal agency with statutory authority paralleling that of the U.S. Federal Emergency Management Agency to direct, manage and fund responses to emergencies.

However in the absence of a Canadian FEMA, it seems reasonable to amend REGDOC-2.10.1 Version 3 to require CNSC licensees to provide information to, report to, and take direction from the Minister of Public Safety and Emergency Preparedness in the event of a declared public welfare emergency or in the case of any severe nuclear incident with impacts outside a CNSC-licensed facility for which no national emergency has yet been declared.

6. Capacity to respond to emergencies

The financial, personnel and equipment capacity of operators of nuclear facilities to prepare for and respond to an emergency is clearly an important regulatory issue.

REGDOC-2.10.1 Version 3 mandates licensees to ensure capacity to prepare to respond to an emergency at their CNSC-licensed facility. Several provisions require licensees to provide human resources capacity for emergency preparedness and response. Under s. 2.2.1, all licensees are required to: "1. establish an emergency response organization (ERO) with a command structure that is clearly defined and integrated 2. define and document the minimum number of staff required to maintain the ERO and their qualifications . . . and 5. define and document how the ERO staffing will be maintained and monitored to ensure the minimum shift complement is available at the nuclear facility at all times".

S. 2.2.1 of REGDOC-2.10.1 Version 3 requires all licensees with an EPZ requirement to have "at all times, a designated onsite person with the authority and responsibility to categorize a nuclear emergency and to perform the following promptly and without consultation, upon categorization of the emergency: 1. initiate an appropriate onsite response 2. notify the appropriate offsite authorities 3. provide the designated person with a suitable means of alerting onsite response personnel and notifying the offsite notification point."

Section 2.2.2 requires licensees to "1. identify an onsite ERF or designated area to be used as a response location 2. identify essential emergency response equipment and describe how its operation and effectiveness during emergencies are assured; essential emergency response equipment includes equipment required to detect and assess hazards and communicate response activities 3. identify and have emergency response equipment and materials that are operational and available in sufficient quantities for an extended multi-shift response; they shall also be readily accessible during emergency conditions."

Section 2.3 of REGDOC-2.10.1 Version 3 also sets out capacity requirements with respect to the recovery from an emergency: "All licensees shall: . . . 2. prepare in advance a strategic recovery plan that: identify and describe the resources (personnel, facilities and emergency response equipment) that are to be available for recovery purposes.

While REGDOC-2.10.1 Version 3 mandates licensee capacity with respect to personnel, facilities and equipment is there a regulatory gap with respect to immediate access to funding to respond quickly to a nuclear emergency?

REGDOC-2.10.1 Version 3 does not mandate that a budget for the emergency response organization be established by the licensee nor does it require the licensee to establish a fund dedicated to ensuring that sufficient financial resources are available immediately to respond and recover from that emergency. In the absence of an approved budget and easily accessible funding for emergency preparedness and response, it is reasonable to question whether licensees are capable of responding quickly to an emergency.

Nuclear Liability and Compensation Act does establish, subject to conditions, the civil liability of an operator of a nuclear installation for damage caused by ionizing radiation emitted from an operator's nuclear installation.[7] Civil liability of an operator of a nuclear facility for damage resulting from a nuclear incident is limited to $1 billion.[8] Nuclear installation operators are required to maintain financial security to compensate persons who suffer damage that is caused by a nuclear incident.[9]

[7] *Nuclear Liability and Compensation Act* s. 9(1)
[8] Ibid s.24(1)
[9] Ibid s.27(1)

Requirements to post financial security (e.g., letters of credit, bonds, insurance) are common under mining laws to ensure availability of funds for reclamation and remediation of mines. Under Ontario's *Mining Act*, mining companies are required to submit a closure plan with financial assurance that covers the full cost of rehabilitation.

Is there a regulatory gap with respect to licensee financial capacity to respond immediately to a nuclear incident emergency? Payment of compensation to persons suffering damage months or years after the fact is important but probably does not address the issue of licensee financial capacity to hire contractors, equipment and facilities immediately as the emergency unfolds.

REGDOC-2.10.1 Version 3 could be revised to require licensees to submit a budget for emergency preparedness and response as part of their EP program and to establish an immediately accessible fund for such an EP program. Such a requirement would be intended to ensure that funds are available immediately for the licensee to respond to the emergency.

7. Public engagement in emergency preparedness and response planning

This section addresses whether licensees should be regulated to ensure community and public engagement in emergency preparedness and response or merely to provide communities and the public with information about licensee emergency plans and activities.

REGDOC-2.10.1 Version 3 includes provisions requiring licensees to inform local authorities and the public with respect to emergency preparedness and response. For example, Section 2.2.7 addresses public emergency information requiring licensees to: "provide information about the emergency to offsite authorities during the emergency response and recovery phases 2. coordinate with offsite authorities when communicating emergency information to the public."

Section 2.6 requires licensees to "incorporate information on public emergency preparedness into their public information program (established as per *REGDOC-3.2.1, Public Information and Disclosure*) to ensure information on emergency preparedness and response is communicated to surrounding communities and stakeholders addresses public preparedness."

Licensees have duties with respect to "iodine thyroid-blocking (ITB) agent administration required for members of the public", and to "provide the necessary resources and support to provincial and municipal authorities in implementing the provincial and municipal plans to inter alia: incorporate information on public emergency preparedness into their public information program . . .to ensure information on emergency preparedness and response is communicated to the population within the EPZ . . . and that this public emergency preparedness information is readily available to the general public, including online."

Overall, REGDOC-2.10.1 Version 3 includes requirements for licensees to provide "information out" to communities and the public but does not require licensees to consult on an ongoing basis with the public or local community in preparing emergency response programs nor does it mandate public or community right-to-know provisions.

Emergency Planning and Community Right-to-Know Act of 1986[10] referred to above in Section 4 takes a different approach. EPCRA mandates establishment of local multistakeholder committees to engage in emergency preparedness and response planning as well as serve as a vehicle for informing the local public about chemical and radioactive hazards relating to a facility.

EPCRA requires local and state governments to develop emergency response plans for chemical and radiological accidents and mandates the establishment of state emergency response commissions ("SERCs") and local emergency planning committees ("LEPCs") to coordinate planning and response: "The State emergency response commission shall appoint local emergency planning committees under subsection(c) and shall supervise

[10] *Emergency Planning and Community Right-To-Know Act of 1986* Public Law 99-499, Chapter 116—Emergency Planning and Community Right-To-Know

and coordinate the activities of such committees."[11] EPCA prescribes a multi-stakeholder membership and public engagement responsibilities for the LEPCs as follows:

"... the State emergency response commission shall appoint members of a local emergency planning committee for each emergency planning district. Each committee shall include, at a minimum, representatives from each of the following groups or organizations: elected State and local officials; law enforcement, civil defense, firefighting, first aid, health, local environmental, hospital, and transportation personnel; broadcast and print media; community groups; and owners and operators of facilities subject to the requirements of this subchapter. Such committee shall appoint a chairperson and shall establish rules by which the committee shall function. Such rules shall include provisions for public notification of committee activities, public meetings to discuss the emergency plan, public comments, response to such comments by the committee, and distribution of the emergency plan."[12]

EPCRA also requires facilities to immediately notify appropriate authorities (SERCs and LEPCs) if there is a release of a hazardous substance that exceeds specified thresholds, which notification is to Includes information on the type of chemical, quantity released, and potential health risks.[13]

EPCRA also mandates community right-to-know reporting. For example, facilities storing hazardous chemicals must provide Material Safety Data Sheets or Safety Data Sheets to SERCs, LEPCs, and local fire departments. Facilities must also submit an annual inventory of hazardous chemicals for public availability.[14] EPCRA also requires certain facilities to report annually on releases of specified toxic chemicals to the environment, which data are compiled into the Toxics Release Inventory which is accessible to the public and helps track pollution trends.[15]

REGDOC-2.10.1 Version 3 could be revised to require licensees to organize local emergency planning committees composed of representatives of governments, first

[11] Ibid s. 11001(a)
[12] Ibid s. 11001(c)
[13] Ibid s.11003
[14] Ibid s. 11011 - 11012
[15] Ibid s. 11031

responders, Indigenous and civil society groups to participate in the planning and monitoring of emergency preparedness and response programs by licensees in order to ensure ongoing public awareness of and engagement in emergency preparedness and response. Under Canada's constitution, a federal regulation clearly could not require the establishment of a provincial nuclear emergency committee. However, establishment and support of local nuclear emergency planning committees could be mandated to nuclear facility operators, with committee members serving in an advisory capacity to the licensee. Members of such local nuclear emergency planning committees would serve voluntarily at the direction of the government or other stakeholder group they represent.

8. Consistency with *United Nations Declaration of Rights of Indigenous Persons Act*

The Government of Canada has clearly stated its commitment to reconciliation with Indigenous peoples. The 2021 *United Nations Declaration of Rights of Indigenous Persons Act* (UNDRIPA) advances implementation of the United Nations Declaration of Rights of Indigenous Persons ("the Declaration")[16] as a key step in renewing the Government of Canada's relationship with Indigenous peoples and affirms the Declaration as an international human rights instrument that can help interpret and apply Canadian law.

REGDOC-2.10.1 Version 3 does not address whether the regulatory document is consistent with the UNDRIPA which provides that: "The Government of Canada must, in consultation and cooperation with Indigenous peoples, take all measures necessary to ensure that the laws of Canada are consistent with the Declaration."[17]

The preamble to UNDRIPA asserts that: "there is an urgent need to respect and promote the rights of Indigenous peoples affirmed in treaties, agreements and other constructive arrangements . . ."

[16] United Nations Declaration of Rights of Indigenous Persons
[17] *United Nations Declaration of Rights of Indigenous Persons Act* s. 5

The Declaration provides that*:* "Indigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions.[18] "States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them." [19]

REGDOC-2.10.1 Version 3 is clearly a proposed "legislative or administrative measure." Given that a nuclear incident with impacts outside the boundaries of CNSC-licensed facilities could well be considered to breach the aboriginal or treaty rights of Indigenous Peoples, consideration should be given to revising REGDOC-2.10.1 Version 3 to ensure consistency with UNDRIPA.

First, REGDOC-2.10.1 Version 3 could be revised to require that licensees engage local Indigenous communities directly to obtain the free, prior and informed consent of these communities prior to approval of to any Emergency Preparedness program.

Second, it is arguable that revisions to REGDOC-2.10.1 Version 3 itself should not be approved without the free, prior and informed consent of Canada's Indigenous people.

9. Validation and oversight of emergency preparedness and response plans

Section 2.2.8 of REGDOC-2.10.1 Version 3 prescribes the duties of licencees with respect to validating emergency response plan and procedures: "All licensees shall: 1. validate ER plan(s) and procedures to demonstrate that systems as designed (equipment, procedures and personnel elements) meet performance requirements and support safe operation 2 validate any changes to ER plan(s) or procedures before implementing them, to ensure

[18] Ibid Art. 18
[19] Ibid Art. 19

continued effectiveness 3. notify the CNSC of changes to ER plan(s)and procedures and submit the results of the validation to the CNSC in accordance with the license to operate."

REGDOC-2.10.1 Version 3 does not prescribe the process for validation, which appears to be determined by the licensee in-house subject to CNSC review. Validation does not appear to involve scrutiny by independent professionals or engagement with local communities.

Scrutiny by independent professionals or engagement with local communities as part of the validation process should strengthen public confidence in emergency preparedness and response planning; REGDOC-2.10.1 Version 3 could be revised to prescribe such measures. Local emergency planning committees, such as those established under the U.S. *Emergency Planning and Community Right-to-Know Act of 1986* could serve as an independent vehicle for validating facility emergency preparedness and response plans.

10. Conclusions and Recommendations

This section sets out conclusions and recommendations for amendments to REGDOC-2.10.1 Version 3 for Northwatch to consider in preparing its submission to the Canadian Nuclear Safety Commission. This report identifies several regulatory gaps and deficiencies such as with respect to:

- Clarity regarding the federal coordination lead to respond to nuclear emergencies with impacts outside a CNSC-licenced facility;
- Financial capacity of licensees to respond immediately to emergencies;
- Public engagement in emergency preparedness and response planning;
- Consistency with *United Nations Declaration of Rights of Indigenous Persons Act;* and
- Independent professional and public engagement in the validation and oversight of emergency preparedness and response plans.

The report identifies the U.S. *Emergency Planning and Community Right-to-Know Act of 1986* as utilizing "best practice" regulatory approaches to emergency preparedness and response that could be adapted to improve REGDOC-2.10.1 Version 3.

The following are recommendations for possible amendments to REGDOC-2.10.1 Version 3 that Northwatch may wish to consider in its submission:

1. Require CNSC licensees to provide information to, report to, and take direction from the Minister of Public Safety and Emergency Preparedness in the event of a declared public welfare emergency or in the case of any severe nuclear incident with impacts outside a CNSC-licensed facility for which no national emergency has yet been declared;
2. Require CNSC licensees to submit a budget for emergency preparedness and response as part of their emergency preparedness program and to establish an immediately accessible fund for such a program;
3. Require licensees to organize local emergency planning committees composed of representatives of governments, first responders, Indigenous and civil society groups to participate in the planning and monitoring of emergency preparedness and response programs by licensees in order to ensure ongoing public awareness of and engagement in emergency preparedness and response;
4. Require licensees to engage local Indigenous communities directly to obtain the free, prior and informed consent of these communities prior to approval of any emergency preparedness program;
5. Require licensees to engage independent professionals or local emergency preparedness committees such as those mandated under the U.S. EPCRA as part of the validation process for emergency preparedness and response plans.

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Ecovision is an Ottawa-based consulting company focused on defending nature and achieving ecologically sustainable solutions for our clients. See www.ecovision-law.ca

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Stephen was a consultant to the Environmental Assessment Panel that reported in 1998 on its review of the concept of geologic disposal of nuclear fuel wastes in Canada along with a broad range of nuclear fuel waste management issues.

Stephen served as policy director and general counsel at Nature Canada until December 2019, and continues to serve as consultant to Nature Canada, Ecojustice and other non-profit organizations. Stephen has also taught environmental law at the Faculty of Law at the University of Ottawa.