Stakeholder Engagement on Small Modular Reactors (SMR)

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Outline or Overview

- Purpose
- Background
- Issue
  - Regulatory Preparedness
  - Addressing Community Concerns
  - Scientific Literacy
- Proposed Approach/Recommendations
- Next Steps

Purpose

- Building confidence in the Canadian Nuclear Safety Commission (CNSC) as a competent authority to regulate the growing industry in Canada

- The Government of Canada is fully behind this project as indicated in Budget 2023

Background

- There is growing interest in implementing SMRs as the technology matures.
  - According to current estimates SMRs will be viable within the decade!

- Canadian Nuclear Safety Commission (CNSC) has extensive experience regulating large nuclear reactors.

- Several novel approaches are being developed for SMRs that collectively introduce the following concerns around their safety and security:
  - Increased use of automation
  - Decreased on-site personnel
  - Use of security-by-design features
  - Increasing volume of radioactive materials being transported
  - Increasing amounts of nuclear waste being generated
  - Smaller, less robust containment systems

Issue

- While the CNSC is confident that the regulatory framework is ready and adaptable to protect public safety as SMRs are implemented and should engender public trust in CNSC as a regulator, this sentiment is not necessarily shared by the various stakeholders!

- Natural Resources Canada is actively promoting the SMR initiative, but their key areas of concern in doing so include:
  - Regulatory Preparedness
  - Addressing Community Concerns
  - Scientific Literacy

Considerations - Regulatory Preparedness

- The CNSC has already taken several steps to ensure the regulatory framework is ready for SMRs:
  - Developing regulatory documents and guidance materials
  - Pre-licensing review service
  - Establishing and participating in working groups
  - Positioning Canada as a global leader for SMR technology

- The CNSC has also taken a critical first step in enabling SMR technology in Canada, by licensing a first-of-its-kind SMR facility, namely the Darlington New Nuclear Project (DNNP).

Considerations - Addressing Community Concerns

- Potential beneficiaries of SMRs as well as bearers of the bulk of the risk
- Highlighted concerns from Northern communities
- These concerns can be mitigated through:
  - Site tours
  - Collaborative environmental monitoring program
  - Lessons learned from the decommissioning process at the Whiteshell power plant
  - Plain language messaging and raising scientific literacy in engagement

Considerations - Scientific Literacy

- Weighing the risks and benefits of SMRs can be challenging for the public due to the high level of technical complexity required to fully understand the technology
    - stakeholder engagement must be sensitive to this and make efforts to meet stakeholders where they are at in terms of technical complexity
    - Efforts should be made to raise scientific literacy related to nuclear technology overall, especially as it is increasingly a part of Canada’s energy milieu

Recommendation #1

***Highlight and improve upon CNSC's existing engagement strategies*:**

- Offering:
  - site tours,
  - collaborative environmental monitoring programs,
  - the Let's Talk Nuclear Safety platform,
  - the Participant Funding Program, and
  - Natural Resources Canada's Action Plan input template
- There is space for CNSC to improve the content and expand the reach of these initiatives to ensure they are meeting stakeholder needs

Recommendation #2

Build scientific literacy related to SMRs

- Building capacity within CNSC for knowledge translation and science communication, by ensuring the use of plain, accessible language throughout all communications with stakeholders. Different communication packages are needed for different stakeholder groups, ranging from basic communication to moderate or more advanced communication packages.

- Approaching communication with patience and humility.

- Co-developing public education materials with stakeholders.

Recommendation #3

Innovate with new communication platforms, strategies and ideas, developed from work CNSC is already involved with

- CNSC/NRC should focus on engaging untapped resources that could be leveraged for public communication efforts, such as:
  - Taking advantage of popular social media platforms, emerging technologies, and science influencers where these exist
  - Working with trusted local figures to deliver messaging promoting SMRs or if not promotion, then to promote discussion that could lead to greater social acceptance over time.

Next Steps

- A separate decision will be asked of you **in the coming months** on a proposed plan for resource allocation within CNSC in order to execute these strategies that require CNSC to build internal capacity for science communication
- We will complete an internal audit of all existing communication channels **within 12 months,** to identify shortcomings and propose solutions to improve them
- We will co-develop proposals for novel communication strategies with our working group partners and DNNP **within 18 months** to present to CNSC for consideration

Questions?

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Improving stakeholder engagement during the implementation of Small Nuclear Reactors

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