



A NEXT STEP

Part of Canada's
Radioactive Waste Review

Integrated Strategy on Radioactive Waste

What We Heard Report (1)

Canadian Radioactive Waste Summit
30 March - 1 April 2021



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Introduction

The Nuclear Waste Management Organization (NWMO) was asked by the Minister of Natural Resources Canada (NRCan) to engage with Canadians and Indigenous peoples to help develop an **Integrated Strategy for Radioactive Waste** as part of the government's radioactive waste management policy review. The NWMO was asked to lead this work because it has close to 20 years of recognized expertise in the engagement of Canadians and Indigenous peoples on plans for the safe, long-term management of used nuclear fuel. This strategy represents a next step – to identify and address gaps, and to look further into the future.

Gaps exist in the long-term plans for low-level and intermediate-level waste, and Canada lacks an integrated strategy. Although all of Canada's radioactive waste is safely managed today, not all of Canada's radioactive waste has a long-term plan that will ensure the safety of people and the environment well into the future. An integrated strategy must be developed in a way that reflects citizen input, international scientific consensus and best practices from around the world to ensure that people and the environment are protected long into the future.

The **Canadian Radioactive Waste Summit** was the kick-off of the engagement process to develop an integrated strategy. It was designed to provide a safe, shared space for multiple voices to be heard, connect participants in new and meaningful ways, and showcase diverse voices and perspectives on the important issues related to developing an integrated strategy for Canada's radioactive waste.

Invited speakers represented Indigenous peoples, civil society organizations, industry, municipal officials, youth and international perspectives. The three-day event, held from March 30 to April 1, 2021, was free of charge and open to anyone interested. It was not a technical event; rather it aimed to create the opportunity for participants, who may not be familiar with all the issues, to hear from a diversity of voices expressing different considerations and to be able to ask questions and participate in breakout sessions to explore these topics and share their ideas.

This report summarizes what the NWMO heard from participants at the summit. The NWMO will use these insights to help it as it engages with Canadians and Indigenous peoples over the coming months to understand their priorities and preferred options for managing Canada's radioactive waste. The NWMO is planning to begin community dialogue sessions in May 2021 with Indigenous peoples, youth, elected officials and interested individuals from communities where the waste is stored today. The organization will also hold various round table sessions, and multiple technical sessions for experts. Information and learnings from these engagements, together with modernized Radioactive Waste Policy direction from Natural Resources Canada, will inform recommendations for an Integrated Strategy on Radioactive Waste to be presented to government later in 2021.



The NWMO is deeply committed to a transparent, inclusive engagement process and wants to emphasize that there are no pre-determined outcomes. The NWMO has committed to reporting on the engagement process throughout. It has a project hub to make information available to participants whenever they join the process – www.radwasteplanning.ca.

Materials from this summit, including videos of all plenary sessions and shared materials are available for viewing online. Future participation options, and opportunities to share your thoughts, are also available on the project hub. Your ongoing participation and input are most welcome.



At a Glance - Key Insights from the Summit

- The federal government's priority is to protect citizens' health and safety, and the environment.
- Polling commissioned by the NWMO highlighted that safety, transportation and alternatives to long-term management were top of mind for the public. The cost of managing radioactive waste was a lower priority for people than its effective and safe management.
- Participant feedback broadly confirmed the proposed guiding principles supporting the integrated strategy. Participants urged safety and security as the top priorities, followed by education. Indigenous knowledge should have a high priority and "cross pollinate" with scientific knowledge. Adding "health" explicitly to the principles was recommended.
- Listening to Indigenous peoples is important to restore trust, bridge relationships and highlight the importance of reconciliation.
- Learning from Indigenous Knowledge is essential to the strategy development process.
- Facilitating Indigenous success must be a key part of any development process. This must go beyond a focus on trauma and righting wrongs.
- Ceremony is the foundation of decision-making for Indigenous communities; without this, negotiations are disrespectful and unaligned.
- Full engagement is required to achieve real buy-in for a strategy that will work for everyone in Canada.
- Education was mentioned several times.
- The importance of youth engagement was emphasized.
- International experience highlights that two big challenges for long-term radioactive waste projects are knowledge transfer when political roles change and youth engagement.
- Some groups were reluctant to participate in the summit, so continuing to offer opportunities for involvement throughout the process is important.
- Environmental racism is an important lens through which to look at past decisions and inform future approaches.

Note: The section "Plenary Session Summaries" provides an overview of the main issues identified in each session.



At a Glance - Key Facts about the Summit

3 days – March 30 to April 1, 2021

- All sessions closed captioned in English and French for accessibility
- Participation opportunities included polls, questions and answers, and breakout sessions



19 plenary sessions

- breakout sessions (two English and two French) with multiple independently facilitated small-group discussions



500+ registrants, of which just under fifteen per cent self-identified as First Nations or Métis

- Canadian representation from nine provinces and territories



35 international participants from sixteen countries



65 speakers and facilitators – twenty-five per cent Indigenous

- Speaker ages: from under 20 to over 85 years old



Reasons for Attending the Summit**

Through live polling during the summit, participants shared the reasons why they were participating:

- To learn/hear about other perspectives (28%)
- To understand how they/their organization could participate over the coming months (25%)
- To learn how the strategy will be developed (24%)
- To learn about the issues (16%)
- To contribute their/their organization's views to the discussion (3%)



At a Glance - Key Themes from the Breakout Sessions

The Canadian Radioactive Waste Summit provided two breakout sessions for participants that allowed for meaningful small-group discussion as well the sharing of diverse opinions and perspectives.

The objectives of the breakout sessions were:

1. To invite and facilitate broad dialogue to develop an integrated radioactive waste management strategy for Canada;
2. To ensure, as much as possible, a broad range of perspectives are considered from the beginning to help shape development of the strategy; and
3. To identify guiding principles and objectives for the strategy, as well as the key questions and issues that will need to be addressed.

Key Finding 1: Education and Public Engagement

Many participants across the breakout sessions highlighted the importance of education through public engagement during the development of the strategy. They agreed there is work to be done in this space and that education is vital for success.

Key Finding 2: Communication and Language

Generally, the concept of communication is important to those who participated in the breakout sessions. Participants emphasized the need for clear, inclusive communication that demonstrates a sense of urgency and provides additional context. A commitment to communication will increase trust and transparency.

Key Finding 3: Safety is Paramount

Another theme that emerged in the discussions was the importance of safety with respect to health, communities and the environment. Many participants emphasized that safety is paramount in the development of the strategy.

Key Finding 4: Sustainability and the Environment

Sustainability was also discussed during the breakout sessions with respect to minimizing the carbon footprint and environmental burden for years to come. It is important to maximize efficiency going forward and think of ways to become a more sustainable industry. For example, a few participants mentioned the reuse of fuels. Industry should be looking for ways that would allow today's waste to be repurposed for the future.

Key Finding 5: A Strategy by and for Canadians

Overall, across sessions, it was clear participants want this to be a strategy created by and for Canadians and that this is key to have buy-in. It is important that various groups, such as Indigenous communities, technical and scientific experts, academics, host communities and surrounding municipalities, have their voices heard during the engagement process. An inclusive strategy is a reflective strategy.

Note: The section "Breakout Sessions" contains a more detailed summary.



Principles (as Shared with Participants)

- **The strategy must have safety as the overarching principle** guiding its development and implementation. Safety must not be compromised by other considerations.
- The strategy must **ensure the security of facilities, materials, infrastructure and information.**
- The strategy must **ensure that the environment is protected**, including the protection of the air, water, soil, wildlife and habitat.
- The strategy must be developed and implemented to **meet or exceed regulatory requirements** for the protection of health, safety and the security of people and the environment.
- The strategy must be **developed in a transparent manner**. Information used to develop the strategy will be readily available to the public.
- The strategy must be **informed by the best available knowledge**. This includes science, social science, local knowledge and international best practices.
- The strategy must **respect Indigenous rights and Treaties** and consider that there may be unresolved claims between Indigenous peoples and the Crown.
- The strategy must **be developed in a way that informs and engages the public**. It is important to proactively provide easily understandable information to those most likely to be affected by implementation of the strategy. Questions and concerns must be heard, acknowledged and addressed.
- Where possible, the strategy should **make use of existing projects** for the long-term management of Canada's nuclear waste.
- The strategy must **be developed and implemented in a fiscally responsible way** to ensure that the cost of the project does not become a burden to current electricity ratepayers, taxpayers or future generations.
- The strategy should **incorporate Indigenous and Traditional Knowledge**. Ensuring that Traditional Knowledge and ways of life are interwoven throughout is important for a strong strategy. This includes knowledge about the land and environment. It also includes values and principles about developing and maintaining effective and meaningful relationships.



Principles (as Revised as a Result of Breakout Session Input)

Note: blue denotes additions of text. Note some principles have been combined for clarity

- **The strategy must have safety as the overarching principle** guiding its development and implementation. Safety, **including the protection of human health**, must not be compromised by other considerations.
- The strategy must **ensure the security of facilities, materials, infrastructure and information**.
- The strategy must **ensure that the environment is protected**, including the protection of the air, water, soil, wildlife and habitat.
- The strategy must be developed and implemented to **meet or exceed regulatory requirements** for the protection of health, safety and the security of people and the environment.
- The strategy must be **informed by the best available knowledge. This includes Indigenous Traditional Knowledge**, science, social science, local knowledge and international best practices. Ensuring that Traditional Knowledge and ways of life are interwoven throughout is important for a strong strategy. This includes knowledge about the land and environment. It also includes values and principles about developing and maintaining effective and meaningful relationships.
- The strategy must **respect Indigenous rights and Treaties** and consider that there may be unresolved claims between Indigenous peoples and the Crown.
- The strategy must be **developed in a transparent manner that informs and engages the public, including youth and Indigenous peoples**. It is important to proactively provide easily understandable information to those most likely to be affected by implementation of the strategy. Questions and concerns must be heard, acknowledged and addressed. Information used to develop the strategy will be readily available to the public.
- The strategy must be **developed and implemented in a fiscally responsible way** to ensure that the cost of the project does not become a burden to current electricity ratepayers, taxpayers or future generations.
- Where possible, the strategy should **make use of existing projects** for the long-term management of Canada's nuclear waste.



CANADIAN RADIOACTIVE WASTE SUMMIT



MARCH 30 - APRIL 1, 2021



Plenary Session Summaries

Canadian Radioactive Waste Summit Agenda at a Glance

The Summit Agenda will be posted soon. In the meantime, take a look at the preliminary agenda at a glance.



Day 1 Tuesday 30 March 2021

- | | |
|--|--|
| 09:00 Virtual Room Opens | 13:55 Bio Break & Stretch |
| 09:30 Traditional Land Acknowledgement | 14:00 BREAKOUT INTRODUCTION: Validating the Principles on which to build the ISRW |
| 09:35 Opening Prayer Day 1 | 14:15 Move to Breakout Rooms |
| 10:05 Welcome | 14:20 MULTIPLE BREAK OUT GROUPS – discussions on Validating the Principles on which to build the ISRW |
| 10:15 KEYNOTE with Q&A: Opening plenary | 15:30 Bio Break & Stretch |
| 10:40 Bio Break & Stretch | 15:45 PANEL: Report back from the Facilitators - Validating the Principles on which to build the ISRW |
| 10:45 KEYNOTE: Update from NRCan on Canada's Radioactive Waste Policy Modernization | 16:20 Closing Remarks Day 1 |
| 11:20 KEYNOTE: Where do we begin: What We've Heard from Public Attitude Research | 16:30 End of Day 1 |
| 12:00 Lunch Break | |
| 12:30 PANEL with Q&A: Taking stock: How is waste managed today | |
| 13:15 Bio Break & Stretch | |
| 13:20 KEYNOTE: Possible futures – foresight analysis – what society may look like in 100+ years | |

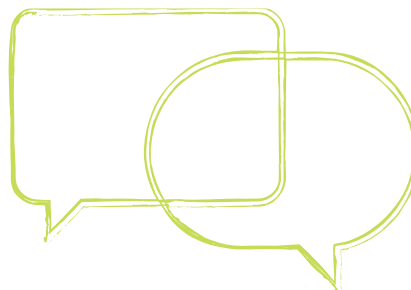


Day 1, Tuesday, March 30th, 2021

Opening Prayer & Summit Welcome

- **Elder Dr. Imelda Perley**, St. Mary's First Nation/Tobique First Nation, New Brunswick
- **Karine Glenn**, Strategic Project Director, Nuclear Waste Management Organization

Opening Prayer Objective: Share Indigenous intentions and perspectives on how to shape positive interactions throughout the Summit.



In an opening prayer, Elder Perley reminded the summit participants of the Indigenous Seven Generation teaching, as symbolized by sweetgrass. As beautiful as sweetgrass is, you do not pick the first one you see, she said; you leave that for the next generation. You do not pick the second one either; that is for the second generation to come. And so on. You only pick the eighth that you see. This teaches us to preserve the gifts we have and reminds us of our responsibility to pass them on.

The sweetgrass was lit and Elder Perley wished for its smoke to open delegates' ears to have respect for others' stories; to open their hearts for understanding; and to cleanse negativity from their hands so they can join symbolically and do the writing that needs to be done – the proposals, commitments, and policies. May they be for the good of all.

Karine Glenn welcomed participants, who numbered 307 during the three days of the summit. Glenn reminded attendees that radioactive waste is being managed safely today but there are some gaps in the long-term plans for this waste. She described the goal of the summit as an exercise in listening to one another and determining the right path for a process to create an integrated long-term strategy in the months ahead. Members of the audience were polled on their intentions for attending, and the most popular response was to learn from the perspectives of other people. Glenn reminded attendees that radioactive waste is being managed safely today but there are some gaps in the long-term plans for this waste. She described the goal of the summit as an exercise in listening to one another and determining the right path for a process to create an integrated long-term strategy in the months ahead. Members of the audience were polled on their intentions for attending, and the most popular response was to learn from the perspectives of other people.



Remarks from NWMO on Integrated Strategy for Radioactive Waste

CANADIAN RADIOACTIVE WASTE SUMMIT



MARCH 30 - APRIL 1, 2021

WELCOME to the SUMMIT

WE WILL FIND A SOLUTION FOR CANADA...

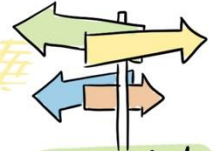
JOIN US ON THIS JOURNEY... TOGETHER!



LAURIE SWAMI PRESIDENT and CEO

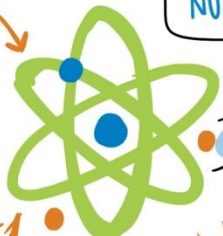
NUCLEAR WASTE MGT. ORGANIZATION

INPUT
FROM PEOPLE IN CANADA



no pre defined OUTCOMES FOR THIS PROCESS!

NUCLEAR medicine
NUCLEAR power
NUCLEAR RESEARCH
ARE SOME BENEFITS...



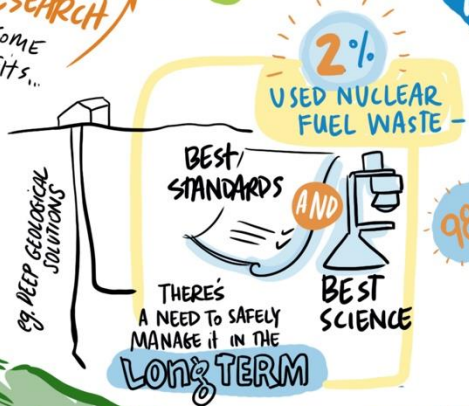
WE'RE HERE TO DISCUSS CANADA'S NUCLEAR WASTE

WHAT WILL CANADA'S LONG-TERM SOLUTION BE?

WE NEED DIALOGUE

INTEGRATIVE STRATEGY

IT'S engagement... ESPECIALLY WITH COMMUNITIES WHERE WASTE IS STORED



98% WE HAVE A STRATEGY FOR LOW AND MEDIUM LEVEL WASTE
eg. equipment

it doesn't need to be a ONE SIZE FITS ALL APPROACH

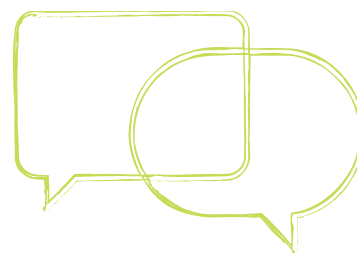
MANAGING NUCLEAR WASTE SAFELY ♥

We can't leave our waste to future generations...



Objective: Launch dialogue aspects of Integrated Strategy for Radioactive Waste Project.

Keynote Speaker: **Laurie Swami**, President & CEO, Nuclear Waste Management Organization



Laurie Swami emphasized that the summit was a first step in a process towards creating the Integrated Strategy for Radioactive Waste (ISRW). The innumerable benefits of nuclear technology to Canadians have been well demonstrated over the past 60 years, from medicine to research. Regardless of attendees' opinions on nuclear, there exists today nearly 3 million cubic metres of radioactive waste that must be disposed of responsibly. While only two per cent of this waste is high-level fuel and is managed with an existing plan based on international best practices, the remaining low-level and intermediate level waste requires a comprehensive plan beyond our safe interim solutions.

The NWMO's goal for the end of 2021 is to present the Minister of Natural Resources Canada with an integrated radioactive waste strategy that has been informed by a diversity of Canadians and Indigenous peoples. The process to create the strategy will be open and inclusive, with no predetermined outcomes. Indigenous knowledge and perspectives will be interwoven and honoured.

Audience questions included why the NWMO has this responsibility, to which Ms. Swami referenced the vast experience of NWMO in seeking public input on the plan for used nuclear fuel, which engaged more than 20,000 Canadians and Indigenous peoples. Another question sought differentiation points on this ISRW process compared to other disposal projects, which was answered by explaining how this process *starts* by seeking input, and how public feedback is paramount.

Another question related to transportation; the safe existing process was emphasised in Ms. Swami's reply. Transport of used fuel is part of the NWMO's process for implementing a deep geological repository, and a similar approach will be taken for ISRW. A question was asked regarding the *implementation* of the ISRW strategy in the longer term, to which Ms. Swami replied that there are no preconceived plans for the NWMO to take on this work. The open dialogues will inform the recommendations presented in the strategy. An attendee wondered if the work of AECL was discarded, which Ms. Swami assured was not the case. Before 1996, AECL completed research and a technical program into disposal strategies for used nuclear fuel. This process resulted in a proposed project. Later, the NWMO picked up on this work when it was mandated to develop and implement a plan for all of Canada's used nuclear fuel.

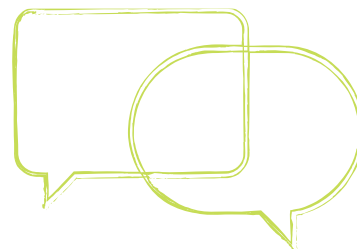
For ISRW, the NWMO is building on its work completed in the early 2000s to better understand Canadians' priorities, hone its organizational values and weave in international best practices and scientific understandings.



Update from Natural Resources Canada (NRCan) on Canada's Radioactive Waste Policy Modernization

Objective: Provide context about why an integrated strategy is needed and share what NRCan has heard in its policy review to date.

Keynote Speaker: **Shawn Tupper**, Associate Deputy Minister, Natural Resources Canada



Shawn Tupper explained the federal government's stance on nuclear energy and the context of the Integrated Strategy for Radioactive Waste. He offered attendees some perspectives of Canada's experience with nuclear technologies, which spans eight decades, provides 15 per cent of Canada's electricity, creates \$17 billion in gross domestic product (GDP) and employs 76,000 people. Managing nuclear power's waste safely is a challenge. The federal government's priority is to protect citizens' health, safety and environment.

Recently, the International Atomic Energy Agency conducted a review of Canada's nuclear sector and recommended the modernization of the framework for radioactive waste management. In response to this, the federal government is seeking to modernize its policy to ensure it is based on the best available science, aligns with international best practices and reflects Canadians' values and priorities. A key part of this review process includes the NWMO's input-gathering for the development of an Integrated Strategy for Radioactive Waste.



Where Do We Begin: What We've Heard from Public Attitude Research

CANADIAN RADIOACTIVE WASTE SUMMIT

A NEXT STEP
Part of Canada's Radioactive Waste Review
MARCH 30 - APRIL 1, 2021

WHERE DO WE BEGIN: PUBLIC ATTITUDE RESEARCH

PAT BEAUCHAMP, HILL and KNOWLTON STRATEGIES



Guiding Principles

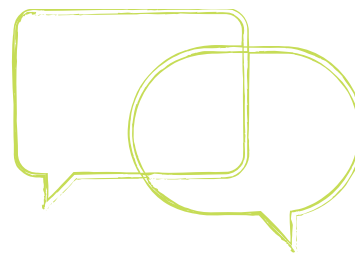
- PROTECT ENVIRONMENT 97%
 - SAFETY 96%
 - MEET/EXCEED REGULATIONS 96%
 - BEST AVAILABLE KNOWLEDGE 96%
 - ENSURE SECURITY 94%
 - TRANSPARENT PROCESS 92%
 - INDIGENOUS RIGHTS 76%
- and MORE -

FULL ENVR PRESENTATION:
RADWASTE PLANNING.CA

- THE THEMES**
- MINIMIZE IMPACT ON ENVIRONMENT
 - REDUCE NEED FOR TRANSPORTATION
 - PROMOTE TRANSPARENCY
 - KEEP FACILITY/FACILITIES AWAY FROM POPULATION CENTRES
 - REDUCE IMPACT ON FUTURE GENERATIONS



Objective: Share insights from recent public attitude research on principles and considerations for the long-term management of low-level and intermediate-level radioactive waste.



Keynote Speaker: **Pat Beauchamp**, Vice President, Research + Analytics, Hill+Knowlton Strategies

Pat Beauchamp shared key insights from a survey conducted in early 2021, reaching 1,625 people, which is considered a representative sample size when effort is made to cover regional and demographic groups that map to the Canadian population. Interestingly, there is much common ground. Respondents' opinions on the topic of radioactive waste did not vary significantly by region. However, while there is agreement on the direction Canada should be taking, respondents have different views about "the best way to get there."

Key takeaways included the public's perception of waste owners as being the technical experts, while government is perceived to be the most important group to ensure transparency, accountability and safeguarding of the public interest.

The public's main questions concerned safety, transportation and alternatives to long-term management. They were also interested in the future use of nuclear energy as it will impact the amount of waste to manage in the future. The cost of managing radioactive waste was a lower priority for people than its effective and safe management.

These survey results included a set of proposed guiding principles that had been developed by the NWMO, incorporating input from its engagement on the long-term management of used nuclear fuel. Feedback from the summit's breakout groups will be used to refine these principles further. Considerations for the future Integrated Strategy for Radioactive Waste development process include ensuring a clear understanding by the public of who the players are within a complex regulatory framework; this can foster faith and trust from the public.

[For more information on this survey and its results, please refer to the full presentation, which is linked here.](#)



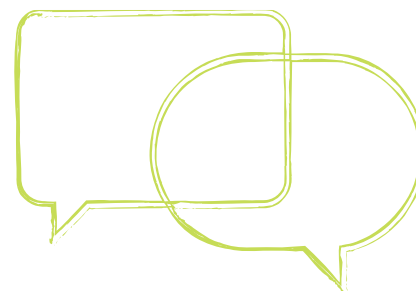
Panel with Q&A: Taking Stock: How is Waste Managed Today

Objective: Provide an overview of current regulatory oversight, radioactive waste management practices, including waste minimization efforts, and projects currently underway for the long-term management of Canada's radioactive waste.

Chairperson: Kavita Murthy, Director General, Directorate of Nuclear Cycle and Facilities Regulation, Canadian Nuclear Safety Commission (CNSC)

Panellists:

- **Mahrez Ben Belfadhel**, Former Vice-President, Site Selection, Nuclear Waste Management Organization (NWMO)
- **Liam Mooney**, Vice President, Safety, Health, Environment & Quality and Regulatory Relations, Cameco Corporation
- **Jason Van Wart**, Vice-President Nuclear Waste Management & Commercial Services, Ontario Power Generation (OPG)



Discussion:

The session opened with brief context setting. In terms of public concerns shared during the CNSC's proceedings, an integrated long-term solution to waste is a top topic and a key prerequisite to develop new nuclear facilities in Canada.

Attendees learned about OPG's support for waste minimization, an outline and illustration of the types of waste, and OPG's support for deep geological repositories for spent fuels, as per international best practices. OPG's dedication to innovation is applied to its embracing of the environmental 3 Rs to "reduce, reuse and recycle." Part of this includes its McMaster Innovation Park lab project, which has created more than 30 jobs to advance sorting, recycling and waste diversion tactics.

Cameco's "Vision in Motion" project was presented as an example of radioactive waste management around the Port Hope Conversion Facility site. This is one of many projects that have reduced accumulated legacy wastes by half (volume). The small, dedicated team was described as being a key factor in the project's success.

The engagement process for the NWMO's Adaptive Phased Management (APM) addresses used nuclear fuel (high-level radioactive waste) and is separate from the Integrated Strategy for Radioactive Waste. Lessons to derive from this outreach include: the public feels responsible to ensure future generations inherit a responsible solution; social acceptability, sound environmental safeguards and technical rigor are important; and a compelling demonstration of willingness and consent from the community's grassroots, including Indigenous communities, is key.

A question arose about which international examples of repositories are being examined by the NWMO. A bigger conversation emerged on Canada sharing and integrating global best practices in facilities, management, waste minimization, community consent and safety



overall. A question arose about transportation, which elicited facts shared including: no incidences of injury or release of radiation after 50 years of OPG's transport operations; and information on packaging, monitoring, auditing and technology. The highly regulated nature of transportation was another international best practice cited by the panellists.

Incineration of radioactive waste was also addressed during the Q&A session, including recoverable ash, environmental assessments, reduced emissions and management. An audience member asked for opinions on the sequence of events wherein Natural Resources Canada is undertaking its waste management policy and the NWMO is leading engagements to inform an integrated strategy concurrently while operational projects are ongoing. All agreed that this concurrent approach makes sense as the waste is being safely managed.



Possible Futures - Foresight Analysis - What Society May Look Like in 100+ Years

CANADIAN RADIOACTIVE WASTE SUMMIT



MARCH 30-APRIL 1, 2021

POSSIBLE FUTURES
FORESIGHT ANALYSIS



break out of PARADIGMS
* Prepare for THE UNEXPECTED!
*

IN 10,000 YEARS..

- ... What if we discover a **NEW ELEMENT**?
- ... What if we become a **MULTI-PLANET SPECIES**?
- ... What if the **METaverse** is more desirable?

WHAT'S OUR NATURE?
DISCIPLINE: Intelligent DESIGN
• altered HUMANS

TRANSFORMATION: CIVILIZED REPENISHING
• not utopian, but sustainable
• near collapse paves the way to put people + planet first
• Distributed power

COLLAPSE: FEUDAL COMPOUNDS
• 1B people only can survive
• Biodiversity collapse
• fear of the "OTHER"

ARTIFICIAL EARTH: CONTINUATION
• unchecked entrepreneurship
• values productivity
• AI, human/computer
• rich upgrade

WHAT STRATEGIES WILL HOLD UP FOR WASTE MANAGEMENT, REGARDLESS OF THE SCENARIO

WHAT MAY SOCIETY LOOK LIKE IN 100 YRS?

FORESIGHT SCENARIOS:

Change can be **QUICK + DRASTIC**
we're ill-prepared.
→ **FOLLOW THE SCIENCE!**



CONTINUATION
"BIZ AS USUAL"

DISCIPLINE



Objective: Explore how society might change in the future and highlight implications rippling out 100, 300 to 10,000 years ahead. Identify possible futures against which any strategy decisions on the long-term management of radioactive waste should be considered.



Keynote Speaker: **Leah Zaidi**, Founder, Multiverse Design

Strategic foresight is the opposite of forecasting, in that it looks at broad possibilities that the future could become, using signals of change, then developing scenarios and eventually strategies. The COVID-19 pandemic shows us that things can change quickly and drastically and how ill-prepared many nations and organizations are to meet crises, many of which are consequences of climate change.

The Indigenous concept of “Seven Generations” used to represent about 140 years. It is changing because we live longer and delay having children, and because of new medical technology. Over time spans of 100 to 200 years, we can extrapolate technologies and trends. However, thinking about more than 10,000 years is much more difficult. To put that time span into context, 10,000 years ago Homo Sapiens shared the Earth with Neanderthals.

Leah Zaidi presented four possible futures to contemplate:

1) **Continuation**: An artificial Earth where policy is directed to infrastructure and technology development, rather than protecting people or the planet.



2) **Discipline**: Intelligent design where human nature is targeted as the ultimate problem. Beings evolve themselves to avoid destructive behaviours, which may compromise diversity and individuality by “editing out our nature.”



3) **Collapse**: Feudal compounds evolve as global warming increases by 4°C, which puts an end to globalized civilization as we know it. Biodiversity and political stability are upended. Nations revert to walled compounds ruled by demagogues, with fanaticism and hostility devastating the planet.



4) **Transformation**: A civilized replenishing occurs after near collapse in this century, where humans put people and the planet first. They root out oppression of all forms and every decision is climate and future-generation positive. A real-time digital ecosystem includes biophilic design, renewables and geo-engineering. Decentralized and distributed power emerges with diverse, expert leaders beyond partisanship. Gross domestic product (GDP) is retired for more comprehensive measures of health and wealth.



Looking ahead 10,000 years or more, we can imagine futures where humans become immune to radioactivity, the Earth is not treated like a trash can, waste is discovered to be useful in new ways, new elements are discovered, or space exploration reveals new energy sources. We can also imagine a future without humans, our existence as a multi-planet species and one without gender, race, sexuality and other identity markers.

Ms. Zaidi encouraged attendees to remember that humanity will still be humanity, and it is necessary to “be honest about how humans behave, instead of the idealized version.”



When asked about the government's interest in collaborating with futurists, Ms. Zaidi remarked that, while the answer is yes, Canada lags in taking advantage of this profession.



Canadian Radioactive Waste Summit Agenda at a Glance

The Summit Agenda will be posted soon. In the meantime, take a look at the preliminary agenda at a glance.



Day 2 Wednesday 31 March 2021

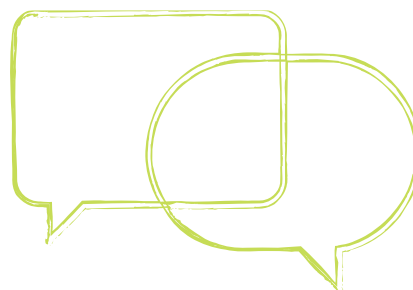
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| <p>09:00 Virtual Room Opens</p> <p>09:30 Traditional Land Acknowledgement</p> <p>09:35 Opening Prayer Day 2</p> <p>10:00 Welcome</p> <p>10:05 Bio Break & Stretch</p> <p>10:10 PANEL with Q&A: The Third Sector: Perspectives from Civil Society Organizations, Activists and Environmentalists</p> <p>10:55 Bio Break & Stretch</p> <p>11:00 PANEL with Q&A: Future Generations: Perspectives from Youth</p> <p>11:45 Bio Break & Stretch</p> <p>11:50 PANEL with Q&A: Past, Present, Future: Considerations for the next seven generations</p> <p>12:40 Break / Lunch</p> <p>13:10 PANEL with Q&A (in French) : Nuclear waste: perspectives for the future</p> <p>13:55 Bio Break & Stretch</p> | <p>14:00 PANEL with Q&A: What do the neighbours think?: Views from communities where the waste is stored today</p> <p>14:45 Bio Break & Stretch</p> <p>14:50 BREAKOUT INTRODUCTION: Finding Common Ground: What we heard and what's important to bring forward?</p> <p>15:05 Move to Breakout Rooms</p> <p>15:10 MULTIPLE BREAK OUT GROUPS – Finding Common Ground: What we heard and what's important to bring forward?</p> <p>16:10 Bio Break & Stretch</p> <p>16:20 PANEL: Report back from the Facilitators - Finding Common Ground: What we heard and what's important to bring forward?</p> <p>16:50 Closing remarks</p> <p>17:00 End of Day 2</p> |
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Day 2, Wednesday 31 March 2021

Opening Prayer & Welcome

- **Elder Fred Kelly**, Ojibways of Onigaming,
- Grand Chief Emeritus of the Anishinaabe Nation in Treaty #3; and former Ontario Regional Director of the Department of Indian and Northern Affairs Canada.
- **Karine Glenn**, Strategic Project Director, Nuclear Waste Management Organization



Opening Prayer Objective: Share Indigenous intentions and perspectives on how to shape positive interactions throughout the Summit.

Elder Fred Kelly shared the origins of his traditional name “Kind Walking Bear,” given to him by a heroic life-saving midwife. He spoke of the sunrise that morning and its connection to the energy our planet offers us. “Our grandfather that lights the day” is the name assigned to the sun in Ojibwe. Traditional beliefs revere winged thunder birds who throw lightning from their eyes to power our world, like the power we receive from various forms of generation.

The mix of nationalities and regions logging on were welcomed, and the many paths to the creator – via religions and beliefs – were honoured and respected. Saying “boozhoo” means the Anishinaabe people acknowledge the fraternal connection we share with our shared relations to the original human beings.

A song was performed as an invocation to bring the blessings of the Creator, the spirits of the four directions, and for the Creator to continually remind us to think of others. “May the thunder-makers light our way, giving us the enlightenment to carry forward.” A kind wish was offered for the health and safety of all attendees in light of the pandemic challenges.

Karine Glenn welcomed participants. On behalf of the NWMO, she committed to listening with an open heart throughout this project and encouraged all participants to do the same.



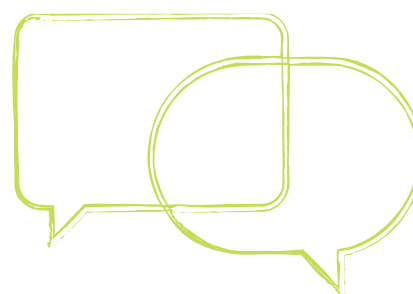
The Third Sector: Perspectives from Civil Society Organizations, Activists and Environmentalists

Objective: Concerns about the safety, security, environmental impacts and governance of radioactive waste have been central to critiques of nuclear technology from its earliest days. This panel explores a range of views among environmental non-governmental organizations (ENGOs) on these topics.

Chairperson: **Tom Adams**, Energy Consultant

Panellists:

- **Manvi Bhalla**, President & Co-Founder, Shake up the Establishment
- **Chief Ian Campbell**, Elected Councillor, Squamish Nation & Board member, MST Development Corporation (MST)
- **Ann Coxworth**, Board Member and Researcher, Saskatchewan Environmental Society
- **Darren Harper**, President & CEO, Maawandoon
- **Mo Phùng**, Alchemist of Ancestral Services, Future Ancestor Services Inc.



Discussion:

The session began with a discussion of environmental racism, public health and its intersections in communities. The NWMO's efforts to create space for ongoing discussions were cited as an example of a respectful, productive dialogue. Transparency and accountability are paramount, as well as empowering all to have a voice to ethically co-design a sustainable long-term strategy. It was noted that white, cisgender men do not perceive risk in the same manner as the myriad of other intersectional identities – valid concerns can only be heard and weighed with a diverse representation at the table.

To address environmental racism as it relates to Indigenous peoples, trust must be rebuilt by honouring treaty commitments to revenue sharing, rights to education, and health. Prior to checking off the “duty to consult” box, it was suggested that Elders, women, youth and men contribute far earlier to the process. The spiritual lens that Indigenous peoples bring to their beliefs of all natural resources adds a significant and transformative perspective to projects.

More broadly, equity, environmental racism and climate justice relates to trust, accountability and transparency among all minority groups – key factors to improve the state of marginalized, affected communities and waterways. Bridging the gap between industry and community organizations to discuss conservation is a basic best practice, which is enriched by taking an intersectional approach to convening groups.

In terms of Indigenous communities' connections to land, its historical, cultural, and spiritual linkage is aligned with the credence eventually given to Indigenous peoples – after many legal battles. While cultural and spiritual values are often removed from governmental processes, they are always important to consider and weave into holistic approaches.

Many Canadian environmental groups in the non-profit and advocacy sector have long



histories of participating in nuclear conversations since the 1970s. Recently, many opted out of the Integrated Strategy for Radioactive Waste due to a perception of the NWMO “greenwashing,” specifically in the composition of its Board of Directors, which in their opinion is too industry-focused. A scenario-based series of consultations from almost 20 years ago hosted by the NWMO was referenced, and those participants’ takeaway was that rolling stewardship was not feasible as we can’t rely on those in the distant future to “do maintenance for us.”

Questions arose from the audience regarding how to bring more parties to the table, and it was mentioned that Natural Resources Canada has been consulting with groups that have decided to opt out of the Integrated Strategy for Radioactive Waste talks. There is a perception that the Canadian Nuclear Safety Commission and Natural Resources Canada are less biased. Some perceived the mandate of the Integrated Strategy for Radioactive Waste to not be firmly committed to integrating feedback. In terms of engaging more youth in these conversations, there must be an indication that youth can lead, affect and design the plans and processes in a more impactful manner.



Future Generations: Perspectives from Youth



FUTURE GENERATIONS: PERSPECTIVES from YOUTH

START EARLY! WHAT IS MEANINGFUL YOUTH ENGAGEMENT?

it's not an easy topic to engage with!

innovation
What can we Leverage... to SOLVE OUR ENERGY PROBLEMS?
- Riya

Indigenous youth know the **HISTORY** of Canada locating WASTE near First Nations communities...
- David

TRUSTED YOUTH ORGANIZATIONS

Use **ANALOGIES**

Connect to Existing Networks - especially for Indigenous YOUTH

We are **CRITICAL THINKERS!**

HANDS-ON LEARNING

We want an **OPEN DIALOGUE** about Nuclear waste

MORE EDUCATION about WASTE

Outreach to **SCHOOLS**

"Low level + intermediate waste is NOT spent fuel"
- Matthew

We don't own the **LAND**...
Indigenous knowledge is **ALIVE HERE**
...eg **ORAL HISTORIES** FROM COMMUNITIES
-Rebekah

TRUST

FOR A SUSTAINABLE FUTURE

PANELISTS:
David Brooks-Bardwell
Matthew Marring, NAYGN
Rebekah Wilson, Nuclear Waste Management Organization
Riya Karumanchi, SmartCane founder
Siobhan Takala, Let's Sprout
Osama Baig, moderator, Ontario Power Generation

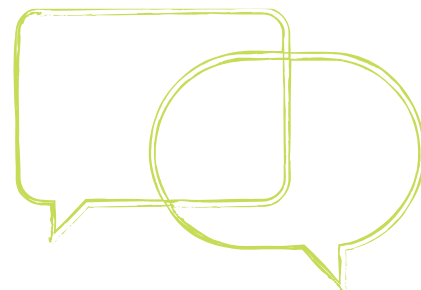


Objective: Explore the perspectives of youth as they relate to principles and considerations for the Integrated Strategy for Radioactive Waste and its long-term management.

Chairperson: Osama Baig, Decommissioning Strategy - Assistant Technical Engineer/Officer, Ontario Power Generation

Panellists:

- **David Brook-Bardwell**, Youth, Wolastoqey, St. Mary's First Nation, NB
- **Riya Karumanchi**, Founder & CEO, SmartCane
- **Matthew Mairinger**, Chair, North American Young Generation Nuclear (Canada)
- **Siobhan Takala**, Co-Founder, Let's Sprout
- **Rebekah Wilson**, Former member, NWMO Council of Elders and Youth



Discussion:

Shaping an authentic and genuine narrative on the topic of nuclear waste requires eliminating many of the misconceptions in popular culture. In light of the climate emergency, we must prioritize our targets to reverse ecological destruction; putting nuclear in the context of other energy sources' waste grounds this dialogue in reality. Contextualizing the waste from nuclear, including the medical and energy origins of the waste, is also important. When engaging with youth generally, it was recommended that meaningful interactions encourage young people to bring all aspects of their identity and are equipped to affect change.

Environmental racism was raised on this panel as well, specifically ensuring community consent, and prioritizing racialized youth. The NWMO's Council of Elders and Youth firmly believes that we do not "own" the land, which is an important concept to bring to these talks. In light of Canada's problematic history with Indigenous communities, listening and integrating information from communities is important to restore trust and bridge gaps.

Each Indigenous community is unique and working on the ground with younger people is required to shift the broader public perception of waste management and nuclear as a whole. With the history of putting undesirable waste sites close to low-income communities and reserves, there must be considerations made for sacred sites, traditional hunting grounds and other important lands. These conversations must occur early and often.

It was mentioned that innovation is not limited to the tech sector and that "non-traditional-tech" sectors are well-positioned to design solutions that can solve problems. It is time to evolve curriculums to engage students better, open up rural areas to more experiences and iterate on energy storage solutions. Reusing used fuel in small modular reactors was cited as an example of this climate-friendly innovation on the horizon.

A brief explanation of radiation, types of waste and their appropriate management solutions followed. The NWMO has used a number of education tools and facts to share this information with various publics. Traditional lessons from Indigenous communities have been interwoven into these information materials; both knowledge systems are treated as equal.

Student Energy was mentioned as an interesting organization gauging global youth



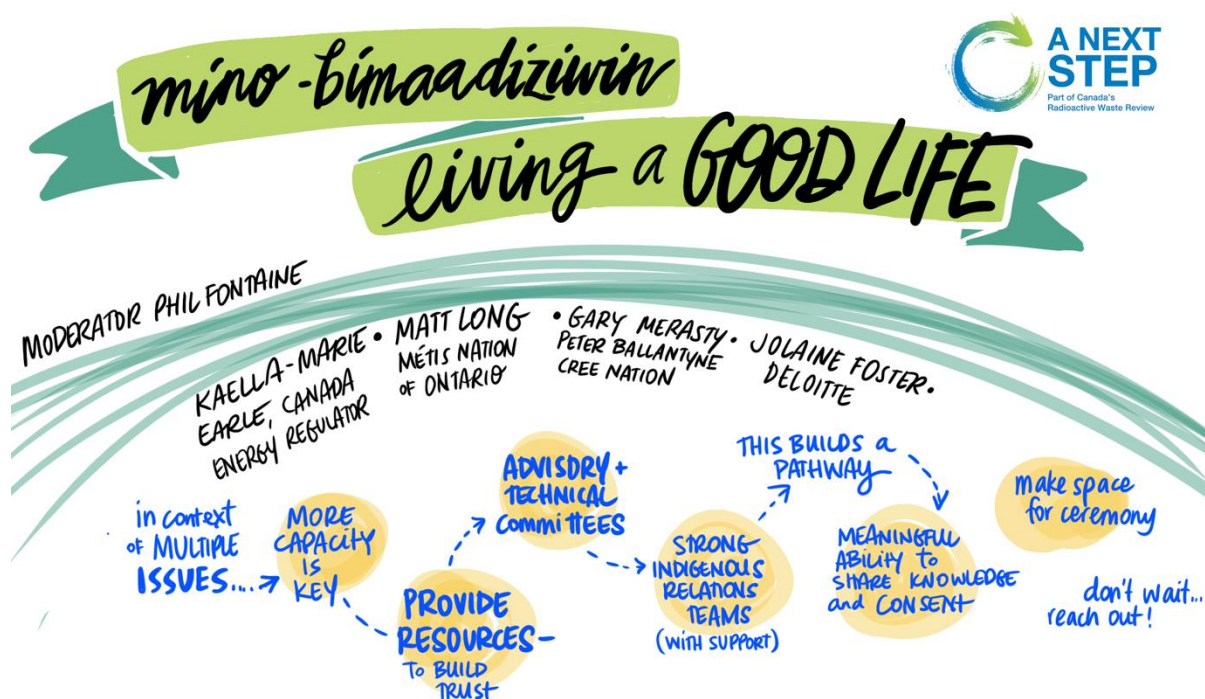
perspectives on our energy futures. Respecting that some youth may or may not prefer to trust the government and/or industries is important.

An audience member asked about how Indigenous Traditional Knowledge was being shared. These holistic systems that are passed on through generations are being reclaimed, including the identification of sacred sites, and often rely on oral or illustrated histories that are being carefully preserved, as well as new, evolving elements, including translating second-hand accounts into more “standard” formats, such as geographic maps.

Career days, social media challenges, essay contests, site visits on field trips and other school outreach tactics were mentioned as successful approaches to educate youth.



Mino Bimaadiziwin – Living a Good Life



Note: The English part of the title of this session is not a direct translation of the term “Mino Bimaadiziwin,” which encompasses an idea that is broader than “living a good life.” The gift of Mino Bimaadiziwin has been given to each of us in the way we act, think and choose to be – the way our ancestors planned for us. We must acknowledge, respect and honour the teachings interwoven into us as Indigenous people and put them into practice. Principles of Anishnaabe Mino Bimaadiziwin do not belong exclusively to the Anishnaabe. They are the principles of the Peace, Power and Righteousness of the Haudenosaunee. They are the original teachings of all Nations on Turtle Island. These principles have been developed to help us define who we are as Indigenous peoples.

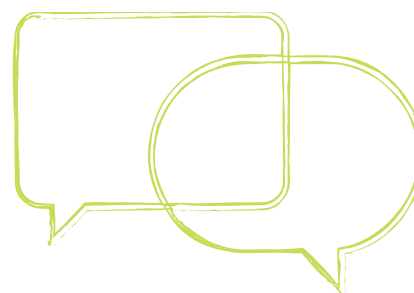
Objective: Indigenous perspectives on commitment to the environment, communities and reconciling development with collective responsibilities for future generations.



Chairperson: **Phil Fontaine**, Executive Advisor, Ishkonigan & Former National Chief, AFN

Panellists:

- **Kaella-Marie Earle**, Vice-Chair, Indigenous Advisory Committee, Canada Energy Regulator
- **Jolaine Foster**, Partner, Prairies Indigenous Practice Lead, Deloitte
- **Matt Long**, Nuclear Energy Analyst, Métis Nation of Ontario
- **Chief Gary Merasty**, President and CEO, The Northwest Company



Discussion:

The difference between engagement and consent was described as either a symbolic, legally required “box ticking” exercise or a true partnership, which is necessary to build trust. In one panellist’s experience of working on pipelines-related projects with older associates, it was not always clear that consultations were occurring to obtain true consent from Indigenous peoples. The adoption of the UN’s Declaration on the Rights of Indigenous Peoples in Canada’s Bill C-15 must be considered, as well as the elected and unelected leaders in these communities. Key considerations in distinguishing the difference involve these interrelated factors: upholding the honour of the Crown; committing to reconciliation; understanding the impact of systemic racism and unconscious bias (manifests as “pathologizing” the Indigenous experience, which minimizes Indigenous knowledge); and understanding what a fair, equitable consultation and engagement looks like.

“Respect” is one of the Anishnawbek’s seven sacred teachings. “Minwaadendamowin” in Anishinaabemowin has three parts: “minwaad” represents cherishing, giving things for mutual benefit; “enda” is reciprocity; “win” is living. This way of living – to reciprocally give things or time – is quite different from a Western definition of “respect.” Facilitating Indigenous success must be a key part and one beyond a focus on trauma and righting wrongs. Ceremony is the foundation of decision making for Indigenous communities; without this, negotiations are disrespectful and unaligned.

Indigenous knowledge is multifaceted and varied; the common thread is living harmonically with the environment. Waste, climate change and pollution can be addressed with this wealth of information, which is also open to wealth, prosperity and development. Intentionally sharing information and resources builds trust; while this may delay original deadlines, it is crucial to success. Many communities with energy projects have advisory committees with technical training to monitor regulatory processes, including Indigenous professionals thriving in meaningful careers, contributing both technical and cultural insights. Too often Indigenous relations fall to hybrid teams tasked with environmental and municipal relationships which are generally under resourced.

It is important to note that Indigenous issues as they relate to public policy are highly politicized – however the majority of Canadians are not especially interested in them. There needs to be room in our parliamentary system for non-partisan policy development for Indigenous people, who demographically have a higher percentage of youth, rural and northern members. There can be “jurisdictional chaos” with multiple layers and levels of



government, NGOs, councils, etc.

The Mining Act was cited as an example of the many policies that should be amended to close the loopholes for industries to not properly consult Indigenous communities in the spirit of reconciliation and partnership. Practices matter more than policies; law and regulations must change to reflect the need to obtain Indigenous peoples' consent at the early design stage. "Braiding" the three types of law – Canadian, International and Indigenous – with the recognition that each Indigenous community is sovereign is key to moving ahead together.

Building consent among *all* Indigenous communities in a territory involves including all parties in the design of the project and being economically inclusive, which means taking a long-term view to relationships (beyond entry-level jobs). Forging friendships requires learning the basics of language, ceremony and ritual, and making an effort to understand the unique needs and priorities of each community.



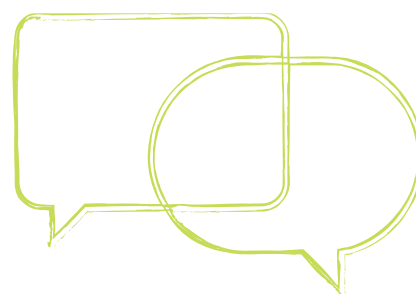
Nuclear Waste: Perspectives for the future:

Objective: to hear from different francophone voices as they explore the many facets of radioactive waste and perspectives on the subject, and share what is important to those they represent.

Chairperson: **Marc Leblanc**, Commission Secretary, Canadian Nuclear Safety Commission

Panelists:

- **Kathleen Duguay**, Manager Community Affairs and Nuclear Regulatory Protocol, NB Power
- **Pierre Moras**, municipal councillor, Bécancour, Québec
- **Konrad Sioui**, Chairman, Board of Directors, Société de l'assurance automobile du Québec; Grand Chief, Huron-Wendat Nation (2008-2020)



Discussion:

We listened to a variety of francophone voices as they explored the many aspects and perspectives on radioactive waste and shared what is important to those they represent. The panel opened with an introduction by the moderator Marc Leblanc, who briefly introduced the three speakers, followed by three presentations of approximately seven minutes each, sharing what the experience of nuclear power and waste management looks like from the perspective of different provinces and populations. Afterwards, several questions were addressed.

We produce other forms of waste in Canada; such as pollution from automobiles, and food and production waste. Participants learned about the benefits of nuclear power. For example, in New Brunswick, almost 50% of the electricity comes from nuclear power and this power helps the province's manufacturing sector and a number of environmental programs, enhancing the biodiversity of the area. It was pointed out that there have never been any serious accidents with the storage or use of nuclear energy in Canada.

In addition, nuclear energy helps First Nations ecosystems, such as their lands and waters. We have built strong relationships based on trust and respect with the surrounding communities, including First Nations. It is essential that Aboriginal knowledge be part of the decision-making process, as the Nuclear Waste Management Organization (NWMO) believes.

The industry is responsible for having an action plan for the decommissioning of its facilities as well as a management plan for its spent fuel. It is important, as the NWMO itself states, to take responsibility for Canada's used nuclear fuel now and not leave it to future generations. Technological advances that will help move forward Canada's plan were also discussed.

We heard a brief explanation of the history and current status of the two nuclear facilities at Gentilly in Bécancour. Bécancour is the only city in Quebec to have nuclear facilities, the Gentilly 1 and Gentilly 2 nuclear power plants. The Gentilly 1 nuclear generating station is under the responsibility of Canadian Nuclear Laboratories, and Gentilly 2 is owned by Hydro-Québec. Wastes of different levels of activity are stored on the site.



It was explained how the waste from the Bécancour site is safely stored according to recognized methods. The regular inspections that take place guarantee that there will be no releases of radioactive materials in the environment.

The citizens of Bécancour have lived alongside nuclear power plants and have accepted this fact in part because the highest safety standards are applied. The position of the Municipality of Bécancour can be summarized in three words: inspection, maintenance and review.

During this presentation, the negative image of the nuclear industry from a First Nations perspective was discussed. One of the reasons given stems partly from the unknown, and from a history of not understanding certain Indigenous traditions.

As for radioactive waste, the safety of transporting radioactive materials is important. People want to know whether the methods used are acceptable, safe and clean. The big question is: are there any dangers to the environment?

It's not that people don't want to discuss or talk about radioactive waste issues, but that there is a general lack of communication. A good place to start would be providing education in schools, where more nuclear and environmental awareness could be raised.

The importance of not only consulting with First Nations but obtaining their consent on the use of their lands was stressed. This will only work if everyone is well informed, if the pros and cons are clearly demonstrated, and if the challenges are expressed in a realistic manner. It was recognized that there are differing views regarding the cleanliness of nuclear power, and therefore forums and events such as this summit are a clear pathway for the message to be conveyed in an informative and inclusive manner.

Several questions from participants were discussed such as, how could we take this even further? What questions remain to be answered? How do we make this an engagement that will stand the test of time?

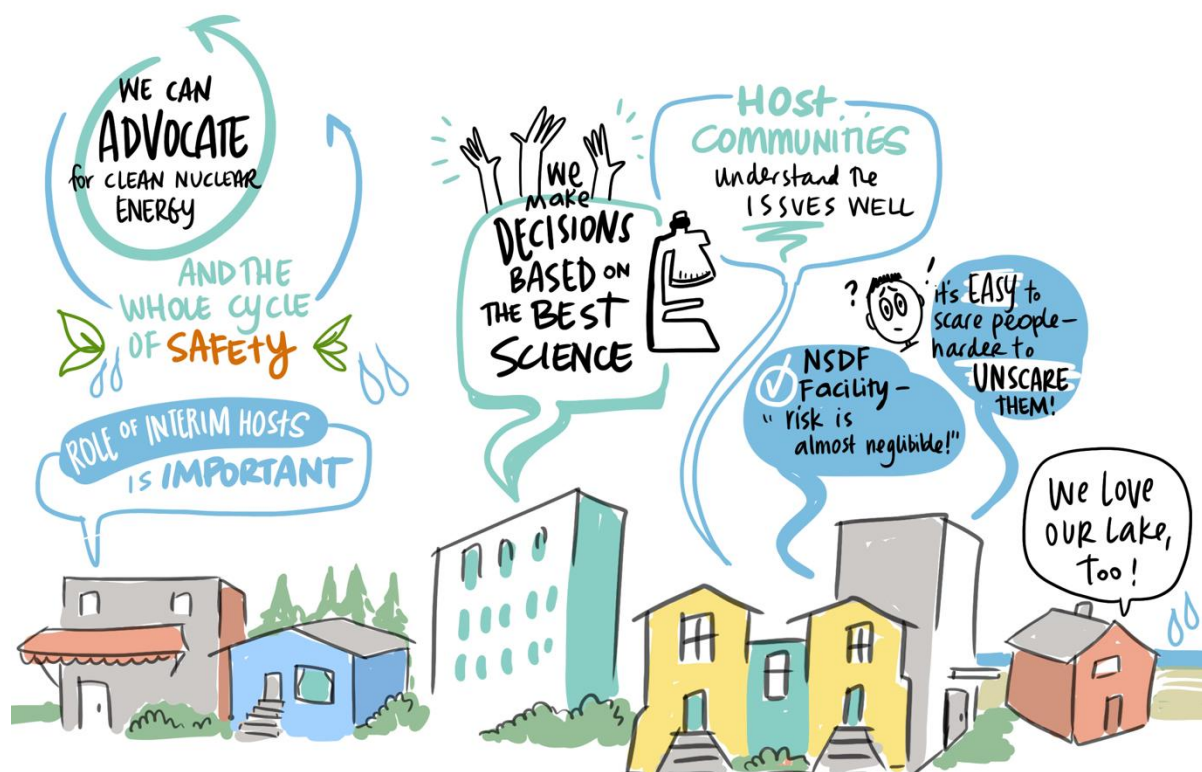
Problems arise when people are misinformed or under-informed. For example, if people are concerned about accidents, the high improbability of this needs to be explained. The goal is to discuss and find satisfactory solutions.

In New Brunswick, is transportation safety clearly communicated? They rely, in part, on the NWMO to communicate safety information to the public, for example, through their transportation document released last year. These are the methods used to reassure the public.

One question that seemed to concern all the panelists was, how do we get support from Francophones? There is a lot more that can be done to make Francophones feel included and engaged, especially since more English speakers work in the nuclear industry, and much of the terminology is better known in English. While this is a challenge, the panelists agreed that a solution to this would simply be to continue information and communication efforts to demystify the issue.



What Do the Neighbours Think? Views from Communities where Waste is Stored Today

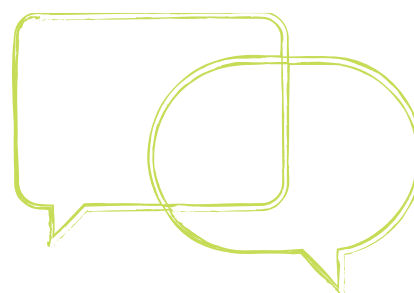


Objective: Hear from leaders of Canadian communities where waste is currently stored and learn about the principles and considerations that are important to their constituents.

Chairperson: **Karine Glenn**, Strategic Project Director, Nuclear Waste Management Organization

Panellists:

- **Suzanne D'Eon**, Mayor of Deep River
- **Anne Eadie**, (now former) Mayor of Kincardine
- **Adrian Foster**, Mayor of Clarington, and Chair, Canadian Association of Nuclear Host Communities



Discussion:

The communities represented were nuclear host communities and supporters of nuclear energy applications in electricity, medicine, research, industry and agriculture. There was a high level of familiarity; for example, one third of Bruce Power workers live in the municipality of Kincardine, as do many OPG workers. Most people have a family member, a relative or a friend who is part of or close to the “whole cycle” of the nuclear industry.

Short-term or long-term interim host communities play an important role in the storage of waste, as well as decommissioning, and would like to be considered as part of a longer-term solution. Decisions around waste must be science-based. The Town of Deep River is the



birthplace of nuclear in Canada with its Chalk River site; surrounding Ottawa Valley region residents deserve to be reassured that the waste is disposed of safely.

There was a follow-up question regarding the Near Surface Disposal Facility (NSDF) and the concerns of citizens being raised as part of the Ottawa city council review. It was clarified that most of this waste is low-level and relates to the construction of the site. An engineered landfill with a multi-layered cap has been proposed, with 500 years of solid protection. The short-lived nature of this radioactivity appears disproportionate to “irresponsible” messaging of detractors, who are privy to the scientific reports that reveal low risks overall. “It’s easier to scare people; it’s much harder to un-scare people.”

The Port Hope area was highly engaged in the Canadian Nuclear Laboratories’ efforts to hear their concerns and address them, which was foundational in the success of that project. During the joint review panels for the OPG DGR in the Kincardine region, many voiced their concerns about waste; however, a disproportionate number of them were not residents of the community. The levels of vigilance and safety reassure most constituents and surrounding neighbours.

One of the biggest advantages of opting in to be a host community – after asking the questions and doing the research – and using the example of Port Granby, was the economic benefits in terms of employment and local spending, which was communicated clearly to the business community. Sometimes those from outside of the community or abroad raise fears and concerns without merit, so it is important to follow the best science available.

Canada’s nuclear regulator (CNSC) is one of the top regulators in the world, and this credibility and extremely robust process offers additional assurances to residents. Any federal review of waste policy must look at the entire picture, including the benefits to the energy sector, not just the waste. Why is nuclear not labeled “clean” or “green” when coal can be? This discrepancy was flagged in government materials. It is important to learn about the entire process to feel confident in the rules, regulations and plans, especially regarding the protection of our water. What Do the Neighbours Think? Views from Communities where Waste is Stored Today



Canadian Radioactive Waste Summit Agenda at a Glance

The Summit Agenda will be posted soon. In the meantime, take a look at the preliminary agenda at a glance.



Day 3 Thursday 1 April 2021

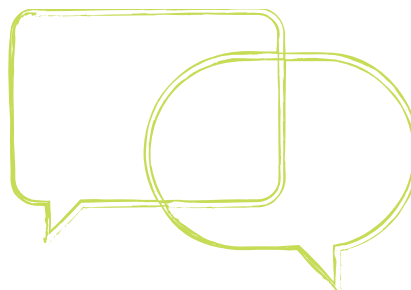
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| <p>09:00 Virtual Room Opens</p> <p>09:30 Traditional Land Acknowledgement</p> <p>09:35 Opening Prayer Day 3</p> <p>10:00 Welcome</p> <p>10:05 KEYNOTE</p> <p>10:35 Bio Break & Stretch</p> <p>10:40 PANEL: LLW and ILW Options being implemented internationally</p> <p>11:25 Bio Break & Stretch</p> | <p>11:30 PANEL with Q&A: If we knew then, what we know now: Lessons learned from past projects</p> <p>12:15 Lunch Break</p> <p>12:45 Panel with Q&As: Innovation in Waste Management</p> <p>13:30 Bio Break & Stretch</p> <p>13:35 RECAP OF SUMMIT: What we Heard</p> <p>14:05 Closing Prayer</p> <p>14:25 Thank you and Next Steps</p> <p>14:30 END of Summit</p> |
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Day 3, Thursday 1 April 2021

Opening Prayer and Welcome

- **Elder Dr. Imelda Perley**, St. Mary's First Nation/Tobique First Nation, New Brunswick
- **Karine Glenn**, Strategic Project Director, Nuclear Waste Management Organization



Opening Prayer Objective: Share Indigenous intentions and perspectives on how to shape positive interactions throughout the Summit.

Elder Imelda Perley discussed the importance of language and naming and referenced the many years Indigenous peoples lost the use of their traditional language, including their own names, while they were enrolled in religious government-mandated day schools. Elder Perley's Maliseet name loosely translates to "one of the whirling winds," which relates to the larger story of the 13 moons, a concept within all Indigenous belief systems.

A symbol of sacred fire was lit to represent the passion within us, the convening in respect and a commitment to achieve a shared goal. A birch bark basket was used to represent knowledge sharing, with the guidance of our ancestors. Sweetgrass was again relayed as a symbol for the dedication to leave behind goods for the seven generations that follow ours. Its braiding represents the merging of our backgrounds and knowledge, its smoke represents the merging of minds, vision, respectful hearing and remembrance of nature's gifts.

During the smudging, which should be a daily ritual, as we cast the smoke behind us for future generations, we imagine earning the "bragging rights" to be responsible stewards of the world. Acknowledge the land you visit and live on, and see the blessing of the ancestral breath we share in our air, waters and earth.

Karine Glenn welcomed participants and provided an overview of the NWMO's plans for engagement activities related to the development of an Integrated Strategy for Radioactive Waste. As part of the NWMO's engagement efforts, the organization will engage in dialogue sessions in communities and with Indigenous peoples and youth focus groups, as well as conducting a deliberative survey. The NWMO is planning virtual community activities over the next several months across Canada.



Keynote: Park Your Assumptions

- **JP Gladu**, President, A2A Rail & Board of Directors, Suncor



While it may seem daunting to achieve consensus and work forward among disparate groups on big projects, Mr. Gladu wanted to reassure the attendees that there are many promising pathways forward, if we move past our preconceived notions of what it looks like to work with Canadian energy production and infrastructure development, Indigenous communities' engagement options, their attitudes to resource development and their economic priorities.

Mr. Gladu's family history of working in natural resources was shared, and now he is one of the first residents in a re-emerging community on their land. This is one of many stories of resilience and achievement in this country; however media portrayals focus all too often on "misery and distress," as well as opponents of projects instead of elected and local groups that support development which offer adequate returns.

In the natural resource sector, when Indigenous people are consulted with respect, mutual opportunities flourish. "Ecological colonialism" and "eco terrorism" are often tactics used by outside agitators, sharing their values and worldviews, pushing themselves to the forefront of protests. They have no long-term interest in conservation, stewardship or the economic well-being of Indigenous communities through sustainable development.

Too often when projects are cancelled, they are labelled "Indigenous issues," such as the vote against OPG's DGR development. A more accurate description is "a development process that involved Indigenous people and Indigenous lands." While leading the Canadian Council for Indigenous Business, Mr. Gladu had a front-row seat to the most positive and empowering Indigenous stories and unparalleled resource and revenue-sharing deals.

While we wait for the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) to be codified into Canadian law, Indigenous community and business leaders are getting on with the crucial foundational work, building strong vibrant societies, identifying and facing barriers with determination.

Now, Mr. Gladu is focused on building a railway from Alberta to Alaska (A2A Rail), leading the Canadian side of the project, across the traditional territories of 22 Métis and First Nations peoples. A group of experienced leaders in the Canadian North-West were assembled and developed a co-production consultation and engagement plan, respectful of the capabilities of all parties. Strong commitments to the environment, cultivating local business through supply chains, and education were made. This \$22 billion project will be 49 per cent owned (minimum) by Métis and First Nation communities.

Mr. Gladu urged participants to park the false assumptions that extreme environmentalism makes up a significant percentage of Indigenous perspectives, that Indigenous peoples are opposed to resource and infrastructure development, that Indigenous communities are unalterably opposed to uranium mining, nuclear energy, and nuclear waste management, and that Indigenous peoples prefer to take a passive role to resource and infrastructure development, relying instead on government to protect their interests.



New assumptions worth believing about communities include that they want and need strong, sustainable economic futures, are cautious about traditional territory developments, are interested in equity investments in projects, expect and deserve respect from those proposing to work on their land, and that their collaboration and partnership are key to a future in resource development in Canada.

Mr. Gladu offered six principles to adopt going forward:

1. Start slow – get to know the community respectfully, travel, participate in ceremonies, ask about community protocols and follow them;
2. Listen – don't arrive with fixed plans, ask for concerns to be outlined without an agenda or timeline to impose on others;
3. Engage – long-term commitment is needed to address emerging challenges with trust and mutual understanding;
4. Plan – focus on shared benefits of extensive collaboration. Approach collaboration with a broad perspective, including education and more;
5. Deliver – generations of broken promises cannot be forgotten, it is integral to follow through; and
6. Celebrate – finalizing contracts, projects, agreements deserve public, joint recognition in the community.

The foundation of broken promises, government intervention and forced poverty makes it remarkable that Indigenous communities continue to extend their hand despite this history. "Get to maybe first" and do not be deterred. Dismantle walls to create the promising long-term collaboration that will flourish, investing in future generations in the spirit of fairness towards Indigenous peoples.



Background on the IAEA was shared, including information about its staff of 2,560 in more than 100 countries, its 172 member-states, and its mandate and impact, including conducting missions, research and more. Every area of the world has some radioactive waste from very low level to high level, be it for industrial uses, energy, medicine, agriculture or research.

There are 100 low-level waste (LLW) repositories operating worldwide. There are about 38 million cubic metres of waste; 81% of all solid radioactive waste that has been created has already been disposed of. The remainder is managed in storage facilities, usually in a solid form.

The waste classifications were outlined for attendees, including the best practices for managing each type. In every region, high quality stakeholder engagement is key. Like the general public and other industries, the nuclear industry takes environmental concerns very seriously – all aspects of reducing waste and conserving resources are taken into account. “Avoid, minimize, reuse, recycle, then dispose” is the hierarchy of solutions. A strong example of this was the United Kingdom, which was able to recycle or reuse 85 per cent of the waste that would otherwise have gone to disposal.

Nordic countries were highlighted – there is no “one size fits all,” despite these countries’ proximity. For more than 20 years, Norway’s research reactors have had a combined storage and disposal facility in the mountainous country; a new disposal facility is planned as well. Denmark has three research reactors, all of which have been decommissioned – this waste is currently in storage, without a disposal facility (similar to Canada). Denmark plans to create a disposal facility years from now. Finland chose shallow geological repositories for LLW/ILW (intermediate-level waste) that are by the facilities that generate the waste, eliminating transportation concerns. Finland also has a deep geological repository under construction for used fuel. Sweden has very low-level waste stored in shallow, local sites. There is a site identified for a used fuel deep geological repository to be located, and a third repository for ILW is being planned.

The small, rural municipality of Östhammar has a unique experience of having three reactors running on its Baltic Sea coast, with low- and intermediate-level waste repositories that were commissioned 25 years ago. In October 2020, the council approved the industry application for a high-level repository. The reasons behind the successful local processes are: voluntarism, knowledge and awareness; openness and transparency; financing; and clearly defined roles. It was important to clarify that no municipal funds were used in these engagements, because they were all covered by industry. Making assurances that roads are kept clear was also important. “Trust takes time” is an important consideration, especially in bringing NGOs into the conversations. There have been no citizens’ concerns raised about the underground nature (below the Baltic Sea) regarding the waste store at Forsmark in this region.

The unique experience in Switzerland involves a need to have conversations with Germany as their repository is close to the border. The surface-level facilities were discussed between two very different cultures: Swiss culture is one of finding consensus whereas Germans focus on pro/con binary decision-making. There is a 10-year, three-stage process in



Switzerland, narrowing down to three regions. While a surface-level solution is working now, by the end of 2022 it will come down to a national vote. Knowledge transfer when political roles change and youth engagement are two big challenges for such long-term projects.

Financing is a huge part of communities determining whether to host, but given Switzerland's small size, all regions have a say and are affected. An audience member asked about getting people involved; responses included: being open and transparent; being clear that the council is open to all outcomes; and emphasizing a "security first" approach.

Another question arose regarding cross-border waste transfers. Sweden imports a lot of waste to melt the metal or incinerate, but it does not allow disposal of the radioactive waste. The national policy of each country determines this: some prohibit both the export and import of waste while allowing treatment, like Sweden. No outside body dictates this.



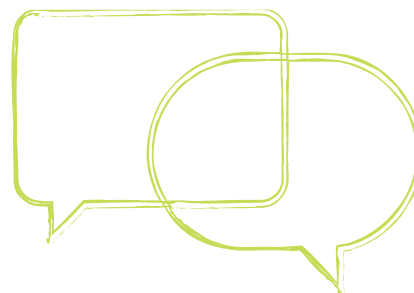
If We Knew Then What We Know Now

Objective: Learn about past large-scale radioactive waste projects in Canada and abroad, and the lessons related to failed or delayed implementations.

Chairperson: **Dr. Monica Gattinger**, Director, Institute for Science, Society and Policy, University of Ottawa

Panellists:

- **Dr. Allison MacFarlane**, Director, School of Public Policy and Global Affairs, University of British Columbia
- **Kapil Aggarwal**, Director of Eastern Waste Operations and DGR, Nuclear Waste Management Division, Ontario Power Generation (OPG)
- **Paul Jones**, Former Councillor of the Chippewas of Nawash Unceded First Nation
- **Dr. James McKinney**, Chief Strategist, Integrated Waste Management, Nuclear Decommissioning Authority
- **Dr. John Weingart**, Associate Director of the Egleton Institute of Politics and author of “Waste is a Terrible Thing to Mind”



Discussion:

One of the shared challenges recounted by the panellists was a result of the long-term nature of their respective large infrastructure projects: changing political leadership, both parliamentary and Indigenous. While “engage early and often” was a top takeaway from all parties, “briefing fatigue” can set in when parties must inform new representatives. Also, while science and facts are important in these conversations, they cannot alone address the need to listen and to build trust over a very long process.

In multi-party conversations regarding timelines, it would have been beneficial to not arrive with a set calendar of milestones prior to initial talks. By expediting processes and requiring votes prior to the necessary briefings to ensure communities are comfortable, ultimately these long-term plans can fall apart.

Thinking about disposal and dismantling from the very start of a program is crucial – you cannot think too far ahead enough; waste minimization and diversion are extremely important. Trust can be lost so quickly and easily; early dialogue and community development is key to moving to the next level of a project.

In discussing public perception of large projects, a perceived lack of control was cited as a major factor in risk perception, so giving communities a high degree of control over the process reduces fear. While we can learn from projects in the 1990s and 2000s, we need to remember our changing society: there is greater acceptance of nuclear energy in light of climate change, the internet plays a huge role in information dissemination, and trust in governments is lower today than ever.



Other crucial success factors were identified as: a competent, well-funded implementer and regulator; trusted parties on all sides; the option to opt out; and compensation and independent technical reviews offered to communities.

Audience questions and answers highlighted:

- More information about the Saugeen Ojibway Nation (SON), their treaties, and waste brought into the territory over the years. It was said that, despite the decision to not go ahead with its DGR project, OPG's ongoing relationships and conversations with the SON are still considered a win. The legacy issues were not delved into during the talks.
- The Swedish example for a high-level nuclear waste site reflects a successful agreement with a willing host. It was mentioned that taking international examples was helpful as guides, but proponents need to remember that focusing locally is crucial to tailor engagements well.
- There should not be a perception of sacrifice for locals in order to meet some societal need.
- How to navigate the perception of "buying a community" by offering economic benefits up front? By helping out the larger region, the region should benefit more than other areas, such as through jobs, investment and more.



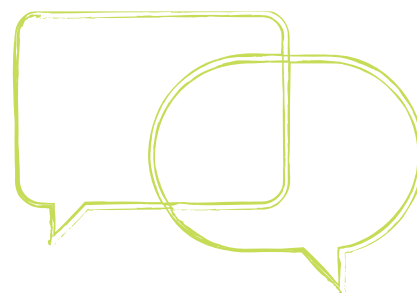
Innovation in Waste Management

Objective: Learn about current and possible innovations in the area of radioactive waste management.

Chairperson: **Bharath Nangia**, President & Chief Executive Officer, Nuclear Promise X

Panellists:

- **Carla Carmichael**, VP Nuclear Decommissioning Strategy at Ontario Power Generation (OPG)
- **Dr Brian Ikeda**, Associate Professor, Faculty of Energy Systems and Nuclear Science, Ontario Tech University (OTU)
- **Alastair MacDonald**, Vice President, Decommissioning & Waste Management, Atomic Energy of Canada Limited (AECL)
- **Jeff Richardson**, Chief Operating Officer, Energy Solutions



Discussion:

Innovation is an appropriate theme for a conversation in the Summit as “the rate of innovation has never been this fast, and will never be this slow again.” From safety to medical isotopes and new discoveries, there is a lot to look forward to in this industry.

The most important topic in innovative waste management is collaboration. OPG is seeking out new technology through innovation, which is essential to achieve success. With an eye to the upcoming Pickering site being safely decommissioned, the Centre for Canadian Nuclear Sustainability was founded. It is researching and developing new solutions with an emphasis on minimizing environmental footprints. A recent example of OPG collaboration is the Moltex energy project to recycle used fuel from CANDU reactors to prepare for new fuel in other advanced reactor designs, which reduces costs overall. Many partnerships have also been struck with post-secondary institutions and other industries.

Utah-based Energy Solutions is practising innovation by safely packaging, transporting, processing and disposing of radioactive material at legacy sites, power plants, research facilities, and more. High-capacity equipment options have been developed to be transported by rail cars and transport trucks. Solid and stable waste forms are packaged from domestic and international sources.

The federal Crown corporation AECL finds that innovative solutions are a vital part of its decommissioning responsibilities and its mandate to enable nuclear science and technology overall. Both the Port Hope and Port Granby sites for low-level waste are innovating on the segregation of their materials and using volume-reduction technologies, such as compaction, laser decontamination and metal melt or other commercial vendor solutions. It is expected that the Integrated Strategy for Radioactive Waste will help chart AECL’s path ahead, mostly for ILW. Reducing risks and avoiding future handling are two key goals for innovation. Making some progress with decommissioning and environmental remediation is always better than taking no action.



The Ontario Tech University (OTU), the youngest university in the province, relays the importance of innovation to its students and is committed to innovation itself. On campus, there are a number of reactor simulators where undergraduate and graduate students can be trained, as well as industry staff. There is a wind tunnel that firefighting students use to test rescue work, that biokinetics students use to monitor the body's reaction to the elements and that virtual reality game makers use to track extreme conditions. The Brilliant Catalyst is specifically for innovation work at OTU – students can develop start-ups here, and this facility offers connections and networking for partners, faculty members and students to collaborate on ideas.

A discussion evolved where waste-specific innovation was delineated from overall project innovation. Designing, building, operating and maintaining equipment as such neglects to remember that eventually it will be decommissioned and it will all be radioactive waste. The lens of perceiving equipment must change – one must think about decontaminating, dismantling and decommissioning a facility from the start. An audience member asked about contacting OTU to connect with the Catalyst: there is a need for more relevant ideas from industry to spark a collaboration with academia generally, as well as a need for a better public relations effort in which objective third parties from the academic world help to improve the reputation of the industry overall.



Closing Session

CANADIAN RADIOACTIVE WASTE SUMMIT

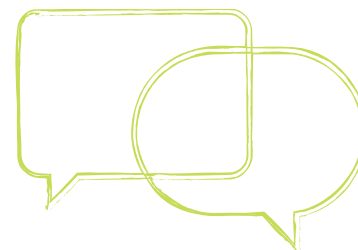


MARCH 30 - APRIL 1 • 2021



Objective: Review the big picture and summarize what we heard over the course of the summit

- **Sam Bradd**, Founder Drawing Change and Digital Graphic Recorder for this Summit
- **Karine Glenn**, Strategic Project Director, Nuclear Waste Management Organization



Sam Bradd took participants through the visuals that he and his colleague, Annalee Kornelsen (French-language Digital Graphic Recorder), had drawn over the course of the summit and the key themes and messages that emerged from these, beginning with Elder Dr. Imelda Perley who grounded us in the land and the seven-generation teaching, which braids us all together. Laurie Swami's remarks encouraged us to find a made-in-Canada solution together for the Integrated Strategy for Radioactive Waste.

Any approach to the safe management of radioactive waste must be customized to suit the needs of host communities and reflect the four key themes in the NWMO's public polling, which were: safety, alternatives, the future of nuclear technology, and transportation. Minimizing the environmental impacts, the need for transportation, lack of transparency, distance to population centres and impact on future generations were top priorities for the survey respondents and were echoed in discussions.

The future view presented by Leah Zaidi was reviewed. Her four scenarios of continuation, discipline, collapse and transformation helped us to imagine 100 or 10,000 years from now in various ways. What strategies will hold up for waste management regardless of the future scenario? Break down our paradigms and prepare for the unexpected is advice that applies to all of them.

When asked to validate the principles, the breakout groups emphasised a desire to not reinvent the wheel, to maximize the efficiency going forward, and to be a world-leader in the



work. The guiding principles were visualized in both official languages in a circle to emphasize that none is more important than another.

On day two of the summit, Elder Fred Kelly suggested we look to the four directions and elements to begin our work in a grounded way. The “mino-bimaadiziwin: living a good life” panellists expressed a holistic worldview, with two groups of people with structural inequality that has minimized traditional knowledge. Moving from tokenizing engagement to consent through community and leadership, more is possible. How do we influence energy policy so Indigenous peoples benefit with two-way respect? Key elements include capacity-building, providing resources, creating advisory and technical committees, cultivating strong Indigenous relations teams, and finding meaningful ways to share knowledge and consent. Also, making space for ceremony is important.

Nuclear host communities shared a commitment to creating space for advocates with all perspectives, making decisions based on the best science, ensuring residents understand the issues well. “It’s easy to scare people, it’s harder to un-scare them,” and “We love our lake,” were two highlighted quotes.

The Francophone session asked “what can this community’s contribution be to this conversation?” It also noted that consultation and consent are essential.

The session about finding common ground among third-sector stakeholders flagged four types of engagement: communication and education, regulatory, economic and community. All must be early, meaningful and true in representation. Again, there is no “one size fits all” approach possible. International partners shared similar values, as well as those on the “Lessons Learned” panel. The theme of a waste management “journey” was repeated, as well as thoughtfulness brought to assembling new sites by taking an eye to their eventual decommissioning. Recognize that long-term consent must be cultivated “early and often,” especially with Indigenous communities who can be empowered, well-informed and sovereign to opt in or out.

Participants were reminded that all illustrations will be shared on radwasteplanning.ca and on the @radwasteplan Twitter account. A detailed thorough international benchmarking report on LLW and ILW options is also posted – with an executive summary in French – on the site.

Karine Glenn thanked the attendees for contributing their views and quickly outlined the various types of organizations participating in the summit and the topics they covered. “By listening to each other we have found some common ground, and we better understand why our views can differ.” We can learn from previous large projects in Canada and abroad. The participant feedback is the backbone of the summit and will be a key part of the report.

Closing Prayer

- Elder Fred Kelly, Ojibways of Onigaming

Elder Fred Kelly thanked all the participants in the Summit and acknowledged Karine Glenn



and the organizers' strong role in hosting and guiding the conversations throughout the three days. The NWMO's Bob Watts and the Elder and Youth Council were mentioned as demonstrating leadership and a commitment to engaging Indigenous peoples by weaving in traditional knowledge. Paul Jones's earlier comments on the OPG DGR project "Lessons Learned" panel and JP Gladu's keynote were cited as having key success factors to engage people. Also, Phil Fontaine's long and comprehensive history of representing Indigenous peoples was mentioned as an important voice during the summit and beyond.

Traditional law should be affirmed, recognized and acknowledged as living laws, like treaties. For example, ceremonies are a part of science and law; they are not segmented from an Indigenous perspective. "My closing is not a closing, we say Giga-waabamin minawaa – we will meet again later...Here on Turtle Island we look to our common land to find common ground."



Appendix - Breakout Sessions

Overview of Breakout Discussion Process

The ISRW Summit provided two breakout sessions for participants that allowed for meaningful small-group discussion as well the sharing of diverse opinions and perspectives. The first breakout session was held on day one of the summit (March 30, 2021) and the second was held on day two (March 31, 2021).

The objectives of the breakout sessions were:

1. To invite and facilitate broad dialogue to develop an Integrated Radioactive Waste Management Strategy for Canada;
2. To ensure, as much as possible, a broad range of perspectives are considered from the beginning to help shape the development of the strategy; and
3. To identify guiding principles and objectives for the strategy, as well as the key questions and issues which will need to be addressed.

Overview of Breakout One

Karine Glenn, Strategic Project Director with the NWMO, set the context for this session. In conversations with citizens about the long-term management of used nuclear fuel, the NWMO heard that long-term planning should be grounded in principles and objectives that reflect the priorities and sensitivities of citizens. This is because of the hazardous nature of the material and because decisions we make today will affect many generations to come.

This session was designed to invite summit participants to consider the guiding principles that should serve as the foundation or starting point for the integrated strategy. With the support of a facilitator and a notetaker, participants were encouraged to consider a list of principles to serve as the starting point for the strategy.

During the breakout sessions, moderators could again share the **11 principles** (abbreviated) in the platform's chat function and verbalize them. The moderators also received preparatory language about the principles. Please see the Appendix for the full text of the principles.

The 11 principles

The Strategy...

...must ensure that the **environment** is protected...

...must have **safety** as the **overarching** principle...

...must be developed and implemented to **meet or exceed** regulatory requirements...

...must be informed by the **best available knowledge**...

...must ensure the **security** of facilities, materials, infrastructure and information...

...must be developed in a **transparent** manner...

...must respect **Indigenous rights** and Treaties...

...must be developed in a way that **informs and engages** the public...

...should incorporate **Indigenous and Traditional Knowledge**...

...must be developed and implemented in a **fiscally responsible** way...

...should, where possible, make use of **existing projects**.



Breakout session facilitators were neutral moderators for the discussions and included the following professionals:

- Neegann Aaswaakshin, Vice-President and Partner, Western Canada, First Peoples Group Inc.
- Manvi Bhalla, President & Co-Founder, Shake up the Establishment
- Chief Ian Campbell, Elected Councillor, Squamish Nation & Board member, MST Development Corporation (MST)
- Lisa Deguire, Principal Consultant, O Consulting
- Angela Donnelly, Senior Associate, Legitimate Leadership
- Aarisha Elvi Haider, Politics Team Manager, Shake up the Establishment
- Kathy Kaye, Behaviour Change Specialist, Leadership Coach, Lucentia Coaching
- Nahla Kor, Owner, Kor Capabilities Consulting
- Valery Navarrette, Strategist, Storyteller and Community Builder
- Rob Woods, CEO, Moosomin Economic Development Ltd.

Overview of Breakout Two

Karine Glenn also set the context for this session. Participants were invited to reflect on the many voices and perspectives they heard during the summit. The objective of the session was to identify the common ground on which the Integrated Strategy for Radioactive Waste could be based and built upon, and to understand the key points of difference that need bridging.

Breakout session 2 facilitators included:

- Manvi Bhalla, President & Co-Founder, Shake up the Establishment
- Lisa Deguire, Principal Consultant, O Consulting
- Angela Donnelly, Senior Associate, Legitimate Leadership
- Kathy Kaye, Behaviour Change Specialist, Leadership Coach, Lucentia Coaching
- Nahla Kor, Owner, Kor Capabilities Consulting
- Valery Navarrette, Strategist, Storyteller and Community Builder
- Rob Woods, CEO, Moosomin Economic Development Ltd.

Breakout Session Themes – What We Heard

The following are the key findings and messages received during both of the breakout session discussions, as these sessions were designed to flow from each other.

Overall, participants noted that the 11 principles proposed by the NWMO were moving in the right direction.

Although progress is being made, participants emphasized several priority areas and gaps that should be considered in the development of the strategy.



Key Finding 1: Education and Public Engagement

Many participants across the Breakout Sessions highlighted the importance of education through public engagement during the development of the strategy. They agreed that there is work to be done in this space and that education is vital for success.

Education for youth. Across sessions, education for youth across Canada was identified as a priority. Participants noted that a multi-generational lens needs to be applied when thinking about the future of nuclear waste in Canada and who will be responsible for it. It was emphasized that it is important to engage this demographic not just to inform them about nuclear waste but to consider the types of careers that are going to be needed in the future that they will have to employ. We have to understand how we are going to set up these youth to be knowledge translators for future generations.

It was explained that there needs to be more opportunities for younger Canadians to become educated on the principles and the decisions that have been made regarding nuclear waste and nuclear waste management from a young age. When speaking about the repository, it was mentioned that the next generations will be the ones at the forefront when the repository is operational. Education at a young age is important to debunk common myths and misconceptions surrounding nuclear energy and nuclear waste, and to improve the literacy of these complex topics.

Education for the broader public. Participants also agreed that there needs to be better education for the broader public about nuclear waste and related topics and issues. It was noted that there is a perceived lack of clear, credible information concerning nuclear usage, storage, waste and fuel, among other topics, that should be addressed. The need for more education for the public on nuclear technology was another point that was raised during discussion.

It was noted that education for the broader public will help address misperceptions and concerns during the engagement, such as nuclear waste runoff into lakes and the safety of transportation. When you start to communicate and educate in a way that resonates with the broader public, barriers start to come down and trust can be built.

Education for communities. Another consideration raised during discussions was that education for communities will have to be tailored and targeted. There are some communities who are located near nuclear plants and are more familiar with them and their functions. There are other communities that have never been previously exposed to nuclear plants. Different levels of education might be needed because of this.

Some participants also suggested finding ways to create community liaison opportunities where people can ask questions of subject experts on this complex issue. This would help lower anxieties and clear up any misinformation.

Indigenous Knowledge. There was a large focus on Indigenous Knowledge during the breakout sessions and participants agreed that more priority should be placed on this. Participants emphasized the importance of understanding that Indigenous voices are not all the same. They each have unique, valuable experiences and opinions that should be respected, considered and incorporated, not only after options have been decided but in the development of those options.

The relationship between the NWMO and Indigenous groups and communities has made significant strides. Participants made it clear that these relationships need to continue to be



built and maintained. It is important to invest time in these relationships for these types of partnerships to truly flourish. One group noted that there was a point in time where Indigenous knowledge-holders and scientists were not understanding each other, but a lot of progress has been made in terms of the scientific communities accepting and understanding when Indigenous communities explain how land and water has spirit and is sacred. This can inform the scientific analysis behind waste management.

Traditional Indigenous Knowledge should remain a priority, and there should be opportunities to enhance decision making by incorporating traditional knowledge and viewpoints. It was emphasized that the conversations about building and maintaining relationships with Indigenous communities and integrating their voices need to be translated into actions. These actions should be long lasting and not performative.

It was also stressed that we have to confront Indigenous discrimination, particularly during this process. Canada must transition to an era where we are no longer treating Indigenous peoples as stakeholders in their own land. They are title holders and need to be involved in this technical analysis as it can adversely affect their traditional territories.

Other key thoughts related to Indigenous Knowledge included:

- Indigenous youth should be more involved in this process.
- A regional lens should be applied to this process. Those that are impacted directly should be engaged extensively, early on during the process.
- Engagement opportunities are not always consistent across the board. We need more robust engagement regimes to make sure voices are being heard, for example, from First Nations and Métis communities.

Do not reinvent the wheel. Several participants explained that the NWMO should look to other projects within Canada and abroad for best practices and successful efforts when developing the strategy. Canada should be using the best technologies available. It is important to learn from past failures as they can help shape an effective, mindful strategy. It was noted that more research and development is needed in Canada so we can become a global leader.

Key Finding 2: Communication and Language

Generally, the concept of communication is important to those who participated in the breakout sessions. Participants emphasized the need for clear, inclusive communication that demonstrates a sense of urgency and provides additional context. A commitment to communication will increase trust and transparency.

Communication for communities. Many participants emphasized the need for clear, impactful communication and how that communication will increase trust and transparency from the organization. Throughout conversations, it was noted that the public should feel empowered with the knowledge they receive. It is important for communities to be informed when sharing their opinions, viewpoints and perspectives.

Understanding the role of communities and how to effectively disseminate messaging to those communities was also seen as an area that should be focused on. Participants asked: *What is the role of the host communities? How do they need to be supported? How is information going to be communicated to them?* It is clear that this information needs to be shared in a clear, accessible way.

Sharing this information with communities in a way that resonates with them will help build trust and transparency, two building blocks that are needed to develop a successful, meaningful strategy. Participants noted that communities and municipalities need to be



recognized as specific stakeholders because their engagement and communications needs will be different.

Communicating urgency. Participants explained how current communications might not be expressing the right level of urgency based on the language that is being used. Some participants noted how current language is too “soft” and needs to be reworded to reflect the severity of these issues.

Inclusive language. When developing key messages and information to be shared with various audiences, it is important for the language of those communications to be accessible and easy to follow. Participants emphasized how, when it comes to speaking about nuclear waste, there currently is a lot of technical terminology and jargon being used. This can act as a barrier and result in key message and call-to-action confusion. Using more inclusive, plain language would resonate more with a broader audience.

French language should also be inclusive and not just mere translations of English content. Some French participants explained that French content can sometimes seem to be a translation of the English and the context can be missed or not reflected properly. Creating true inclusive bilingual materials is key.

Additional Context. Some participants mentioned how, although the guiding principles are moving in the right direction, they lack some additional context that could make them stronger. It was recommended to layer in additional context for principles to make them more concrete. For example: *What does it mean to incorporate Indigenous rights? What does respect for the environment mean?* Participants said there is a need to dig deeper to provide that clarity.

Key Finding 3: Safety is Paramount

Another theme that emerged in discussion was the importance of safety with respect to health, communities and the environment. Many participants emphasized that safety is paramount in the development of the strategy.

It was noted that when developing the strategy, we need to keep in mind that the safety of the Earth and the environment needs to be maintained and preserved for generations to come. Participants also explained the importance of safety of local and larger communities involved in this process.

Key Finding 4: Sustainability and the Environment

Sustainability was also discussed during the breakout sessions with respect to minimizing the carbon footprint and environmental burden for years to come. It is important to maximize efficiency going forward and think of ways for nuclear to become a more sustainable industry. For example, a few participants mentioned the reuse of used fuels. Today’s waste can potentially be repurposed for the future.

Key Finding 5: A Strategy by and for Canadians

Overall, across sessions, it was clear that participants want this to be a strategy created by and for Canadians so that it has buy-in. It is important that various groups, such as Indigenous communities, technical and scientific experts, academics, host communities and surrounding municipalities, have their voices heard during the engagement process. An inclusive strategy is a reflective strategy.



Appendix - Live Mini Polls

During the Summit, the NWMO wanted to provide participants opportunities to share their thoughts in various ways – by asking questions of the speakers, taking part in the breakout discussion sessions and via live quick polls on the summit platform. Taking the pulse of participants enriches this research and allows the NWMO to hear from participants in real time.

Live polling questions during events provided a platform to the participants to convey their feelings, reactions and feedback. Over the three days of the summit, using the platform's live polling tool, participants were asked about their **participation motivations** and **perceptions** related to the **NWMO's engagement efforts in developing the strategy**. Participation was voluntary; hence the number of responses fluctuated over the three days.

Mini Poll Questions

1. What brought you here? What do you hope to get out of the Summit? (Select all that apply)
 - a. To learn about the issues
 - b. To learn how the strategy will be developed
 - c. To contribute my/my organization's views to the discussion
 - d. To learn/hear other perspectives
 - e. To understand how I/my organization can participate over the coming months
 - f. Other (please specify)
2. How should we seek to engage Canadians and Indigenous peoples to understand their views and perspectives over the coming months?
3. What should we make sure of?
4. What should we avoid?
5. The Summit is the start of our engagement with Canadians and Indigenous peoples. How can we continue to involve you and provide you updates on future engagement activities and what we are hearing through the dialogue? (Select all that apply)
 - a. Direct communication (e.g., email update, newsletter)
 - b. Event Invitations
 - c. Video updates
 - d. Infographics highlighting results and other information
 - e. Detail reports
 - f. Other (please specify)



Results

The high-level findings are as follows:

Participants came to the summit to learn/hear about other perspectives (28%), to understand how they/their organization could participate over the coming months (25%), to learn how the strategy will be developed (24%), to learn about the issues (16%), and to contribute their/their organization's views to the discussion (3%).

In response to open-ended questions, participants shared that the best way to engage Canadians and Indigenous peoples is to have an open, transparent public engagement and outreach program. The importance of easy-to-understand communication shared in a proactive manner was also a common theme mentioned in the open-ended data.

Participants want to be informed about the future engagement activities through direct communication (e.g., email updates, newsletters) (88%), event invitations (79%), detailed reports (58%), infographics highlighting results and other information (52%), and video updates (42%).



Appendix - Promotional Campaign - Social Media

1. Campaign Objectives

The **Canadian Radioactive Waste Summit** was the kick-off of the engagement process to develop an integrated strategy. It was designed to provide a safe shared space for multiple voices to be heard and to connect participants in new and meaningful ways. The summit program was designed to showcase diverse voices and perspectives on the important issues related to developing an integrated strategy for Canada's radioactive waste.

Invited speakers represented Indigenous peoples, civil society organizations, industry, municipal officials, youth and international perspectives. The event was free of charge and open to anyone interested. It was not a technical event; rather, it aimed to create the opportunity for participants, who may not be familiar with all the issues, to hear from a diversity of voices expressing different considerations and to be able to ask questions and participate in breakout sessions to explore these topics and share their ideas.

To ensure a successful event, the various publics needed:

1. To be informed and reminded of both the engagement on the ISRW and the summit event;
2. To feel welcomed by, relevant to, and empowered to participate in the summit; and
3. To be reached *at volume* and to be accompanied, at the event, by other stakeholders to share with and learn from.

2. Methodology, Parameters and Results

As it was important to encourage wide participation, the NWMO used social media and digital banner ads to broaden its existing reach to relevant audiences in order to raise awareness of the summit and stimulate registration.

Direct outreach was made to National Indigenous Organizations, regional Indigenous organizations and Indigenous communities to increase awareness of the summit and invite participation through banner ads and emails.

To encourage wide participation, the NWMO used paid promotion on the ISRW's social media channels and struck a balance between its project-specific channels (Facebook and Twitter) and the official languages (English/French).

Ads deployed on Twitter were shown and seen 139,818 times across Canada. A total of 119,157 impressions were earned in the English campaign, and the ads were clicked-through to the website .23% of the time, which is below what might be expected for established brands, but excellent for a "cold-start" brand with little following.

Ads on Facebook reached 143,148 people 243,201 times, meaning the audience saw the ads an average of 1.7 times. Campaigns on Facebook drove 5,500 visits to the project websites, which represents a Click-Through Rate (CTR) of more than 3%.

For comparison, the average CTR on Facebook ads is .73% for education and 1.04% for technology industry content.

3. What this meant



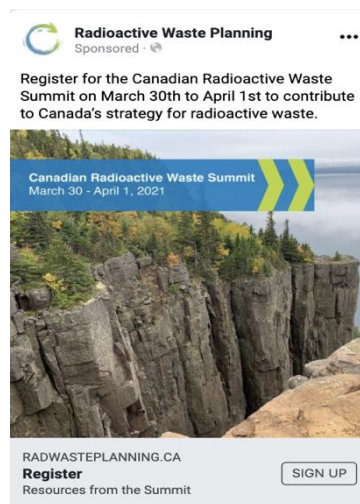
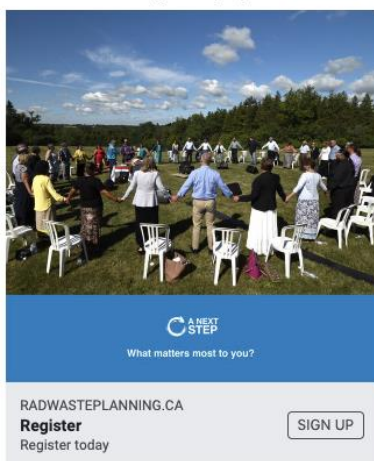
There is a real appetite for participation in the conversation about the ISRW. More than 500 people registered for 17 hours of virtual programming, discussion and conversation over three days, at the end of a quarter, and a year into pandemic Zoom-fatigue.

4. Campaign Assets

The NWMO produced and ran a total of 36 pieces of creative for the ad campaign.

Here are some of the ad-variants used on Facebook and Instagram, in English and French:

We're hosting a virtual summit March 30th to April 1st to explore what's important to Canadians and Indigenous peoples ...See More



Here is a banner ad created for paid placement on Indigenous websites:

Welcome - Bienvenue - Boozhoo - Tánishi - Tungasugit

Canadian Radioactive Waste Summit
March 30 - April 1, 2021

Sommet sur les déchets radioactifs canadiens
le 30 mars au 1^{er} avril 2021

[REGISTER TODAY](#)

Here are some of the ad-variants used on Twitter, in English and French:

Radioactive Waste Planning @RadWastePlan · Mar 22

We're hosting a virtual summit March 30th to April 1st to explore what's important to Canadians and Indigenous peoples on the development of a strategy for Canada's radioactive waste.

Have your say on the next step

[Register Now](#)
radwasteplanning.ca

Radioactive Waste Planning @RadWastePlan · Mar 22

We're hosting a virtual summit March 30th to April 1st to explore what's important to Canadians and Indigenous peoples on the development of a strategy for Canada's radioactive waste.

Canadian Radioactive Waste Summit
March 30 - April 1, 2021

[Register for the Canadian Radioactive Waste Summit](#)
radwasteplanning.ca

Radioactive Waste Planning @RadWastePlan · May 14

Join a conversation convened among Canadians and Indigenous peoples to shape the integrated strategy for radioactive waste.

Have your say on the next step

[shape the integrated strategy for radioactive waste](#)
radwasteplanning.ca



Appendix - 11 Principles Full Text Used during Breakout Session

- **The Strategy must have safety as the overarching principle** guiding its development and implementation. Safety must not be compromised by other considerations.
- The Strategy must **ensure the security of facilities, materials, infrastructure and information.**
- The Strategy must **ensure that the environment is protected**, including the protection of the air, water, soil, wildlife and habitat.
- The Strategy must be developed and implemented to **meet or exceed regulatory requirements** for the protection of health, safety and the security of people and the environment.
- The Strategy must be **developed in a transparent manner.** Information used to develop the Strategy will be readily available to the public.
- The Strategy must be **informed by the best available knowledge.** This includes science, social science, local knowledge and international best practices.
- The Strategy must **respect Indigenous rights and Treaties** and consider that there may be unresolved claims between Indigenous peoples and the Crown.
- The Strategy must **be developed in a way that informs and engages the public.** It is important to proactively provide easily understandable information to those most likely to be affected by implementation of the Strategy. Questions and concerns must be heard, acknowledged and addressed.
- Where possible, the Strategy should **make use of existing projects** for the long-term management of Canada's nuclear waste.
- The Strategy must **be developed and implemented in a fiscally responsible way** to ensure that the cost of the project does not become a burden to current electricity ratepayers, taxpayers or future generations.
- The Strategy should **incorporate Indigenous and Traditional Knowledge:** Ensuring that Traditional Knowledge and ways of life are interwoven throughout is important for a strong Strategy. This includes knowledge about the land and environment. It also includes values and principles about developing and maintaining effective and meaningful relationships.

Note: These principles were revised as a result of participant feedback.

