

NWMO Elders Forum 7 Report

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July 2010

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Forum Facilitator & Rapporteur

nwmo

NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

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Nuclear Waste Management Organization

The Nuclear Waste Management Organization (NWMO) was established in 2002 by Ontario Power Generation Inc., Hydro- Québec and New Brunswick Power Corporation in accordance with the *Nuclear Fuel Waste Act (NFWA)* to assume responsibility for the long-term management of Canada's used nuclear fuel.

NWMO's first mandate was to study options for the long-term management of used nuclear fuel. On June 14, 2007, the Government of Canada selected the NWMO's recommendation for Adaptive Phased Management (APM). The NWMO now has the mandate to implement the Government's decision.

Technically, Adaptive Phased Management (APM) has as its end-point the isolation and containment of used nuclear fuel in a deep repository constructed in a suitable rock formation. Collaboration, continuous learning and adaptability will underpin our implementation of the plan which will unfold over many decades, subject to extensive oversight and regulatory approvals.

NWMO Dialogue Reports

The work of the NWMO is premised on the understanding that citizens have the right to know about and participate in discussions and decisions that affect their quality of life, including the long-term management of used nuclear fuel. Citizens bring special insight and expertise which result in better decisions. Decisions about safety and risk are properly societal decisions and for this reason the priorities and concerns of a broad diversity of citizens, particularly those most affected, need to be taken into account throughout the process. A critical component of APM is the inclusive and collaborative process of dialogue and decision-making through the phases of implementation.

In order to ensure that the implementation of APM reflects the values, concerns and expectations of citizens at each step along the way, the NWMO plans to initiate a broad range of activities. For each of these activities, reports are prepared by those who designed and conducted the work. This document is one such report. The nature and conduct of our activities is expected to change over time, as best practices evolve and the needs and preferences of citizens with respect to dialogue on nuclear waste management questions is better understood.

Disclaimer:

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NWMO ELDERS FORUM 7

Circle of Life Thunderbird House
Winnipeg, MB
July 13-15, 2010

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NWMO ELDERS FORUM 7

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Background

The NWMO dialogue with Aboriginal Peoples regarding the long-term care of Canada's used nuclear fuel began in 2003. Since then NWMO has hosted a series of meetings and dialogues with Aboriginal people at various levels and supported the development of an 'Elders Forum' and their Working Group, Niigani. The Elders Forum members are accompanied by an Aboriginal youth of their choice (see Participant list – Appendix 1) who play an active role in the Forum.

Following the selection in June 2007 by the Government of Canada of the NWMO recommendation, Adaptive Phased Management, the Elders Forum has focused their advice to the NWMO on guidance for working with Aboriginal communities as it laid the foundation for implementing the approach.

Following a two and half year design phase, that included a special additional meeting of the Elders Forum and extensive public and Aboriginal dialogues in 2009, the NWMO has finalized the design of the process for selecting a site for a deep geological repository (DGR) facility and initiated the site selection process in May 2010.

Introduction

The 7th NWMO Elders' Forum held at the beautiful Circle of Life Thunderbird House in Winnipeg continued the work of understanding and developing the foundation for the long-term relationship between the NWMO and Aboriginal people that will be needed in the implementation of Adaptive Phased Management. This Forum was part of an ongoing dialogue with Aboriginal Elders designed to enhance NWMO's understanding of Aboriginal cultures and traditional knowledge and its' application, through Elders' advice on how to engage with Aboriginal communities throughout the various stages of implementing the Adaptive Phased Management approach.

In response to requests made in the previous Forum, Niigani lead a series of initiatives that became the major focus of the 7th Forum. These included the development of a comprehensive report highlighting the advice of the Elders Forum provided since its inception; a youth training seminar on understanding the long-term management of used nuclear fuel which was designed to increase their ability to help explain the technical aspects of nuclear waste management; the work of the Traditional Knowledge committee on their efforts to explore community based experience in addressing the challenge of interweaving traditional knowledge with western science in local development projects; and the design of a special workshop to familiarize Forum members with a 'Community Involvement' approach, from the perspective of Aboriginal peoples, to identifying issues and challenges.

Much of the work of the NWMO in the months leading up the 7th meeting of the Forum focused on the refinement of the Siting Process which was developed through 2008-2009. The NWMO provided participants with an overview of the process and a report on how the issues raised in the Elders' special meeting last year, and from other dialogue sessions, had been addressed.

Significant participation from the NWMO was appreciated and signaled the appreciation for both the learning opportunity and the seriousness in which the advice from the Elders Forum was being taken. This included Board members Ron Jamieson and Deborah Poff; and Advisory Council members Donald Obansawin, Marlyn Cook, Eva Ligeti and Fred Gilbert. Along with President Ken Nash a number of NWMO staff also attended the Forum. (See attached Participants List.)

Forum participants also talked extensively about their future role as the work proceeds through the stages set out in the Siting Process. The discussion focused around the role of Niigani in community and regional engagement with Aboriginal peoples.

An exhibit set up in the meeting room and designed to inform and educate was well received with several participants commenting on the value of having 'hands on' and visual resources to understand the more technical aspects of nuclear waste management.

This report highlights these activities and discussions. A number of technical questions were addressed; these have been grouped together and are included in this report.

Niigani Presentations: *Responding to Direction from the Elders Forum*

Since its inception the Elders Forum and Niigani have advised the NWMO in a number of areas. In 2009 the Elders Forum requested that Niigani draft a report that would summarize their advice from 2005-2009. Niigani noted that the NWMO has been very responsive to the Elders Forum however there are some areas of interest that might require additional exploration for advice to the NWMO. Three areas of particular interest to the members were identified by Niigani as their specific focus for projects which they will lead in 2010 and 2011 to further enhance the advice given to the NWMO:

- Elders Forum Youth involvement in understanding the long-term management of used nuclear fuel
- Traditional Knowledge
- Community Involvement: from the Elders Forum perspective

The following section of the report features the Niigani summary of past advice as presented in their draft Report to the Elders Forum as well as the ground work lead by Niigani over the past year in the three project areas above.

Elders Forum/Niigani Report: Highlights of the advice provided by the Elders Forum & Niigani 2005-2009

Niigani Chair, Gordon Williams and member Chris Lafontaine as co-authors presented a summary of the Report of the Elders' Forum and Niigani 2005-09. Gordon reviewed the Elders' Forum Mission Statement as the basis for advice and described how members of the Elders' Forum were chosen, and the basis on which the NWMO and Elders' Forum have worked together. He emphasized that members do not see themselves as advocates or adversaries regarding nuclear waste but they are advocates and adversaries when they discuss processes to engage the Aboriginal community, the use of traditional knowledge, Treaty and inherent rights of Aboriginal people.

Gordon highlighted the multi-faceted advice the Elders Forum gave on safe guarding Mother Earth, safety, engaging communities, protection of Aboriginal and treaty rights and considering the needs of future generations. He described the Elders Forum advice on traditional

knowledge and ceremonies that have been shared, the importance of effective communications across cultures, ways to build and maintain trust, and the mutual benefits of continuing learning from each other.

He reviewed the components of the report including the advice provided and work of the NWMO to respond and wide range of initiatives designed to address issues raised. He noted the importance of the NWMO approach as setting new standards for bringing together two worldviews to establish a process for discussion and cooperation on a very difficult issue.

Chris Lafontaine spoke about Traditional Knowledge and the importance of teaching NWMO staff about Aboriginal culture and stressed the importance of respect for intellectual property rights. He suggested that, as much of the NWMO's work is technical, concepts and ideas are not easily transferrable between the cultures. Chris emphasized the importance of the work to be done at the community level including ensuring that sound community development principles to engage communities are utilized and appropriate educational and communicational tools are developed to ensure they are fully informed.

He concluded the report summary, discussing the strengths of the NWMO approach, identified that there are still areas where action will need to be taken by the NWMO and highlighted the importance of this record of what Niigani and the Elders Forum is doing for legacy purposes.

Gordon Williams concluded that Niigani and the Elders Forum are unique and that the NWMO's model is at the cutting edge of how business should be done with First Nations.

Following the presentation, Forum members raised questions and offered suggestions for improving the report prior to finalizing it. Many reiterated issues and advice provided in the past. Over the course of the two-day meeting the Elders concluded that they would like to have a revised draft of the report discussed at their next meeting.

Youth Presentation: Understanding the Long-term Management of Used Nuclear Fuel

Youth members of the Elders Forum participated in May in a learning event to understand the long-term management of used nuclear fuel. Nine of the youth members were able to participate in the seminar and prepared presentations for the Elders Forum on what they learned. They were Lindsay Amahoose, Tanisha Augustine, Roy Bois, Lance Gardiner, Amber Laliberte, Veronica McGuire, Bekki Wilson, Melanie Nepinak and Krista Peterson.

The focus of this project is to respond to requests made by the Elders Forum that the youth members develop a good understanding of the NWMO's work in order that they can assist others in understanding this subject. They have also noted in the past that the youth can help in providing information on the subject to the Elders Forum itself. The learning opportunities with the youth took place through in-person meetings and electronic web seminars and discussion covering the topics identified in earlier discussions – understanding used nuclear fuel; understanding the design and development of a deep geological repository; understanding the site selection process. The project team also noted that later seminars will be developed around other subjects including a discussion on traditional Aboriginal community decision-making processes.

Following their spring seminar, the youth members developed slide presentations to share what they learned and discuss their experience (Appendix 2). They described the various types of radiation and how it can be shielded; the experience around the world with the use of deep geological repositories and the barriers used to block radiation; and finally they described the design and testing of transportation methods from around the world. The youth invited questions from the Elders and were able to answer, at least in part, some of the technical questions raised. Youth and Elders recognized that this is a complex subject and when needed, the youth called on NWMO representatives to assist them in their explanations.

Traditional Knowledge Project 2009: The challenge of drawing from the Canadian experience with using traditional knowledge and western science

This project team is made up of Elders Forum members Gordon Williams, Donna Augustine, Mike McGuire, Thomas Mattinas, and Krista Peterson. Staff member Cynthia Jourdain assisted the group and coordinated their work. This project seeks to explore community based experience with addressing the challenge of interweaving traditional knowledge with western science in local development projects. Two examples of projects were explored using an interview process and the results of the interviews were presented by the team.

The Eel River Bar Heritage Garden in New Brunswick and Casino Rama heritage centre in Ontario were visited by team members. In addition to learning about the history of the project the interview questions included: How was the project conceived? How was the project funded? How were Elders/Traditional Knowledge involved in the planning of the project and were traditional ways incorporated into the project? What does the future look like for this project?

Following site visits and interviews with local people involved in these projects, the team concluded that although there were some interesting components, these projects did not provide them with sufficient information to draw effective conclusions regarding the weaving of traditional knowledge and western science in the planning and management of a project. Members of the Forum discussed this challenge of bringing these two very different ways of thinking and knowing together. There is not a lot of positive experience from an aboriginal perspective of where their knowledge has been fully respected in project planning and management where western management systems and science is also involved. They discussed the reality that the NWMO will not be able to have an easily identifiable road map on how to do this, rather it will take a commitment to evolving a respectful approach that has yet to be fully achieved elsewhere and a concerted joint effort between the NWMO and the Aboriginal people of the siting area to develop a procedure for sharing knowledge and experience on this project.

Some Elders voiced their concern based on past experience that although the NWMO is the project lead, the Government will make the final decision (on APM) and they may not consider the importance of TK in the licensing and implementation of the project.

Community Involvement Project: *Developing Tools*

Chris Lafontaine provided an introduction to the project and described a Community Involvement exercise which is part of the design of their project which he hoped could be conducted during the Elders Forum. As background to underscore the importance of effective community involvement, he referred to the United Nations *Declaration on the Rights of Indigenous Peoples* and *Article 28* which describes the need for *Free, Prior and Informed Consent* of indigenous peoples in the use of their traditional lands as the desired outcome to community involvement in the NWMO's work. The Community Involvement (CI) project seeks to explore the nature of Aboriginal community involvement in order to enhance the community's capacity to make decisions related to their willingness to consider being a potential host community to the APM deep geological repository. The project is designed to identify a list of issues, concerns, strengths and weaknesses and activities important in dialogue as the community prepares to make decisions.

Chris explained the CI project process and the chart that will be used by the project team to capture every issue identified. The issues are then rated as to what is thought to be important; this in turn can inform the agenda for resolution of concerns. Niigani began this project in part to help the NWMO understand 'community' from an aboriginal perspective, that in Aboriginal Communities "collective" well-being takes precedence over the individual. Chris talked about what it is the Elders Forum can do to help a community make the choice to be a "willing host

community”. Elders Forum members recognize that there will be communities that say no to being a host community for this project, but others that will come forward because of the various economic development benefits. He asked the following questions; when a potential Aboriginal willing host community comes forward, how do we ensure they understand the project? And what should be done to help their members?

Forum members agreed to test out the process however there was much discussion on ensuring that this project result in something that might be viewed by communities as a helpful starting point when Aboriginal host communities become engaged with the NWMO. One Forum Elder questioned the process of identifying issues and stressed that it is the community who should decide on what they mean by free, prior and informed consent. One youth member felt it was important that we don’t tell a community what their issues are and recognize that every community is different.

Forum members proceeded to identify issues which were recorded on flip charts for compiling following the Forum. Chris noted that the issues raised in past Forums will also be reviewed and consolidated into a booklet for rating. This will be brought back to the next Elders Forum and participants will see what is identified as important and the context for the rating for each. Following this, the Niigani project team will draw up a final report on their findings.

NWMO Presentation –Moving Forward Together: Process for Selecting a Site for Canada’s Deep Geological Repository

Jo-Ann Facella of NWMO provided background on the dialogues and events leading to the final refinement of the siting process. She provided an overview of what was heard in dialogues; changes made to the siting process in response; the initiation of the site selection process; and the next steps. A copy of this presentation can be found as Appendix 3.

Forum members sought a number of clarifications as follows;

- Which step we are in? We are in Step 1 - Building awareness, this will continue throughout the project.
- Can a private land owner be a willing host community? The NWMO would encourage the private land owner to work with the local accountable authorities to come forward to be considered for the project. Ultimately, involvement must

extend to the community grassroots in order to assess and ultimately gain their support.

- On what basis can we be confident that the NWMO will continue to meet its commitments in the future? Since 2002, the NWMO has documented its commitments, and reported its activities against these commitments, in order that it can be held accountable by Aboriginal peoples and Canadians now and over time.
- Who are the interested communities? Can that information be shared? The Township of Ignace in Ontario has expressed an interest in learning more and is currently learning about the project. . The NWMO continues to respond to requests for information from communities which have not yet decided whether to enter the site selection process.
- Which Provinces would be considered? The NWMO responded that the focus of site selection is on provinces directly involved in the nuclear fuel cycle as Canadians involved in the NWMO study identified as best achieving fairness. Communities which express interest in other provinces will also be considered.
- What is the role of the third party, and who is the third party? The assessment of the suitability of a site will be conducted by the NWMO over 3 steps. At each step, the NWMO will offer communities resources to hire their own expert to assist the community and to review the site assessment work. At Steps 2 and 3, the site selection process requires that a third party review group be established collaboratively with the community to formally review the assessment conducted during that step. Review by the third party review group is optional at Step 2 and is at the discretion of the community.

Members from Saskatchewan described the process by which First Nations in that province are able to claim land through Treaty Land Entitlement and noted concern that the province of Saskatchewan not be considered the 'accountable authority' in the case of Crown Land potentially being the site of the deep geological repository – because this may circumvent the Treaty Land Entitlement process.

Related to the next steps in the implementation of the site selection process, Forum members discussed the appropriate role of the Forum and Niigani. Some felt it was their role to protect Aboriginal rights while others thought it was to guide and provide advice on the use of traditional knowledge. Participants recognized they did not want to impose themselves on aboriginal communities, rather wish to play a supportive role upon the request of a community.

Questions around the protocols for inviting Forum members to meetings requested by communities and clarification of their 'mandate' from the Forum were raised.

There was a suggestion to have a review of the performance of Niigani members as the working group of the Forum who meet more frequently and interpret direction provided. While there was no resolution to this discussion and it was clear that there are many different viewpoints on these questions, members agreed to focus on this in their next in-camera session.

Forum members agreed that there is no common agreement within the Elders Forum on a definition of community; this needs to be better understood by everyone and in particular their understanding of the steps in the site selection process through which a community may initiate its interest in the project and continue through each step. It will be important for NWMO to address this openly at all times to ensure that the site selection process does not undermine Aboriginal collective rights.

Chris Lafontaine asked participants to consider what the leadership of an Aboriginal community might need to ask of their people if they wanted to be considered as a host community.

Technical Questions

Throughout the Forum, technical questions were raised. These have been grouped here. One member, speaking in regards to a dialogue held with the Ontario Native Women's Association, highlighted one question about the stability of the ground "when our elements are so strong, the thunder spirits¹ can break apart mountains", she asked if research had been done to test the strength of the thunder spirits. She also asked how much water is used to cool the nuclear bundles, and where does the water go? President Ken Nash answered the water question, providing the example of the wet pools at nuclear stations being equal to about "twice the volume" of the Thunderbird House and all of the water is contained and re-circulated and not discharged into a lake. Sean Russell of the NWMO described the geological research that is done in developing the design and safety of the deep geological repository and noted that understanding the traditional knowledge where the site will be located is important to the work of the NWMO.

A youth member suggested that youth members of the Forum could help in the siting communities in the initial engagement steps in providing a transition to youth in these

¹ Thunder Spirits in this context refers to the power of the earth to quake or erupt.

communities in educating them on the technical aspects of the project, their background in culture and in what they have learned through their training and involvement with the NWMO.

Next steps

A reoccurring theme in all meetings of the Forum is the importance of building trust. Members emphasized the importance of sharing our truths with each other and one member suggested that it would be important to hear from each member of the NWMO Board regarding their vision of the project and participation of Aboriginal people. Yet another member reiterated her view that the word truth (in addition to honesty) should be added to the Elders Forum Mission Statement. “In order to gain trust you have to be truthful, and then you can call yourself honest.” Other members continue to feel comfortable with the words “honesty” and “wisdom” in the Mission Statement which they believe includes “truth.”

In 2010 and 2011 Niigani will continue the work to design and lead projects building on their ground work to date. They will make progress presentations to the Elders Forum and seek their input to enhance the advice to the NWMO.

Forum members agreed to hold an in-camera meeting in the fall to finalize their compilation of their 2005-2009 advice report and to review the performance and role of Niigani.

It was suggested by Elders Forum members that the advice of the Elders Forum be present in future reports made by NWMO to Parliament. The NWMO noted that it is required to submit a report in 2011, called the “Triennial Report”. NWMO offered to include the Elders Forum 2005-2009 report with its 2011 Triennial Report should the Elders Forum be able to complete it at their Fall 2010 meeting, this will give the NWMO time to have it included with their report. The Forum members felt this would be suitable and agreed to discuss and complete at their Fall meeting.

Appendix 1

NWMO ELDERS' FORUM 7

PARTICIPANTS			
<i>FIRST NAME</i>	<i>LAST NAME</i>	<i>COMMUNITY</i>	<i>PROVINCE</i>
Eli	Angiyou	Akulivik	QC
Lindsay	Amahoose	Bonnyville	AB
Donna	Augustine	Rexton	NB
Tanisha	Augustine	Rexton	NB
Gwen	Bear	Fredericton	NB
Roy	Bois	Eabamet Lake	ON
Elmer	Courchene	Pine Falls	MB
Jean	Courchene	Fairford	MB
Frances	Dumais	Bonnyville	AB
Jim	Favel	Ile-a-la-Crosse	SK
Bill	Flett	Selkirk	MB
Angus	Gardiner	Ile-a-la-Crosse	SK
Lance	Gardiner	Ile-a-la-Crosse	SK
Helen	Jacob	Eabamet Lake	ON
Tasha	Kaye	Winnipeg	MB
Chris	Lafontaine	Regina	SK
Vianney	Laliberte	Ile-a-la-Crosse	SK
Amber	Laliberte	Ile-a-la-Crosse	SK
Mary	Magiskan	Thunder Bay	ON
Josephine	Mandamin	Thunder Bay	ON
Tom	Mattinas, Sr.	Thunder Bay	ON
Micheal	McGuire	Thunder Bay	ON
Veronica	McGuire	Thunder Bay	ON
Madeline	Meeseetawageesic	Eabamet Lake	ON
Melanie	Nepinak	Winnipeg	MB
Anna	Novalinga	Puvirnituk	QC
Krista	Peterson	Fredericton	NB
Joseph	Postras	Scarborough	ON
Mary	Richard	Winnipeg	MB
Jim	Sinclair	Regina Beach	SK
Roland	St. Germain	Barrie	ON
Billy	Two Rivers	Kahnawake	QC
Gordon	Williams	Orleans	ON
Rebekah	Wilson	Markdale	ON
Jennifer	Prisciak	Barrie	ON
Pam	Rice	Regina	SK
NWMO			
Marlyn	Cook	NWMO Advisory Council	
Jo-Ann	Facella	Director, Social Research & Dialogue	
Stephen	George	Senior Engagement Advisor, Aboriginal Relations	

Fred	Gilbert	NWMO Advisory Council	
Ron	Jamieson	NWMO Board of Directors	
Cynthia	Jourdain	Engagement Associate, Aboriginal Relations	
Eva	Ligeti	NWMO Advisory Council	
Jamie	Matear	Senior Advisor, Aboriginal Relations	
Pat	Moran	General Counsel & Corporate Secretary	
Ken	Nash	President & CEO	
Donald	Obonsawin	NWMO Advisory Council	
Pat	Patton	Director, Aboriginal Relations	
Deborah	Poff	NWMO Board of Directors	
Sean	Russell	Director, Repository Engineering	
Kathryn	Shaver	Vice President, APM Engagement & Site Selection	
Peter	Simmons	Director, Municipal & Community Engagement	
Facilitator			
Joanne	Barnaby	Joanne Barnaby Consulting	
Guests			
Stuart	Wuttke	AFN, Acting Director, Environmental Stewardship Unit	
Jordan	Kinnear	AFN, Policy Analyst, Environmental Stewardship Unit	
Barbara	Nepinak	Winnipeg	MB
Clarence	Nepinak	Winnipeg	MB

***Bold indicates Elder**

Appendix 2

Youth Presentations

**NWMO Elders Forum
Winnipeg, July 2010**

**Youth Presentation
Understanding the Long-term Management
of Used Nuclear Fuel
July 13, 2010**

Lindsay Amahoose, Tanisha Augustine, Roy Bois, Lance Gardiner,
Amber Laliberto, Veronica McGuire, Bekki Wilson,
Melanie Nepinak, Krista Peterson




Presentation Overview

- Radiation and Radioactivity
- Deep Geological Repository and the Multiple Barrier System
- International Approaches in the Long-term Management of Used Nuclear Fuel
- Transportation of Used Nuclear Fuel

**Elders Forum Youth Presentation
Radiation and Radioactivity**

NWMO Elders Forum
July 13, 2010

Veronica McGuire & Bekki Wilson



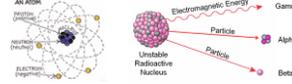
Presentation

Radiation and Radioactivity

- What is radiation
- Radiation around us
- Types of radiation
- Shielding

What is radiation?

- Energy traveling from a source through space.
- Radiation is emitted when a nucleus is unstable.

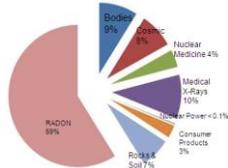


- Atoms release radiation.
- Most of the radiation we encounter is electromagnetic and behaves like light.
- Radiation can also take the form of a particle released from a nucleus.

Radiation is everywhere!

It comes from:

- The air we breath
- The food we eat & the water we drink
- The buildings we live in & the products we use
- The sky and earth

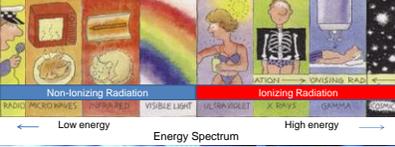


Radiation occurs naturally and is all around us

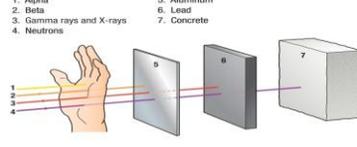
Types of Radiation

Non-ionizing Ionizing

Radiation that does not have enough energy to produce electrically charged particles. Radiation that has enough energy to produce electrically charged particles



Shielding



**Elders Forum Youth Presentation
Deep Geological Repository and
the Multiple-Barrier System**

NWMO Elders Forum
July 13, 2010

Lindsay Amahoose, Krista Peterson & Lance Gardiner



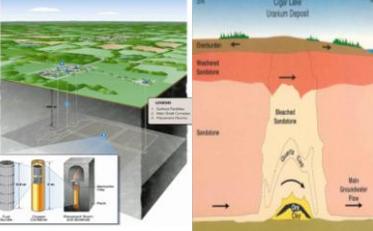
Presentation

Deep Geological Repository and the Multiple Barrier System

- Deep Geological Repository and Natural Analogue
- Cigar Lake (SK) and Oklo (Africa)

- Multi-barrier System
- Used Fuel Pellet
- Elements and Bundles
- Used Fuel Container
- Geosphere

The Deep Geological Repository Concept and Cigar Lake



Oklo, Gabon, Africa

- Natural Analogue





Elders Forum Youth Presentation International Approaches in Long-term Management of Used Nuclear Fuel

NWMO Elders Forum
July 13, 2010

Tanisha Augustine & Roy Bois

Presentation

- International approaches in long term management of used nuclear fuel
- Swiss and Swedish Deep Geological Repository development photos

Potentially Suitable Host Formations

Canadian & international studies have shown that both crystalline rock and sedimentary rock are suitable for long-term containment and isolation of used fuel

Country	Rock Types Considered	Status of Research / Investigations
Finland	Crystalline	Constructing URL / DGR → granite
Sweden	Crystalline	DGR → granite
Belgium	Sedimentary	URL → sedimentary
France	Sedimentary & Crystalline	Bure URL sedimentary rock; Siting → sedimentary
Switzerland	Sedimentary & Crystalline	URLs in both rock types; Siting → sedimentary
Canada	Crystalline & Sedimentary	URL → granite closing; Studies → both rock types
Japan	Crystalline & Sedimentary	Constructing URL → both rock types
Spain	Crystalline & Sedimentary	Studies → both rock types
UK	Crystalline & Sedimentary	NDA responsible for implementation
Germany	Salt	URL → salt investigations stopped; Under review
USA	Volcanic Tuff	Under review



Elders Forum Youth Presentation Transportation of Used Nuclear Fuel

Elders Forum Youth
July 13, 2010

Amber Laliberte & Melanie Nepinak

Presentation

Transportation of Used Nuclear Fuel

- Classes of dangerous goods
- Used fuel transportation package – tests and DVD
- Used nuclear fuel transport experience

Classes of Dangerous Goods

Regulatory Framework

Transportation Modes

Certified Transportation Package (TYPE B)

- Design Features:
 - Containment
 - Shielding
 - Impact Protection
 - Thermal Protection
 - Fuel Assembly Retention
 - Handling
- Type B package conforms to IAEA standards to be reviewed

Used Fuel Transportation Package – Tests

- › Drop test – 9 m onto unyielding surface
- › Penetration test – 1 m drop onto steel pin
- › Thermal test – 800°C for 30 minutes
- › Water immersion test – 15 m depth for 8 hours



Used Fuel Transportation Package – Tests



Used Nuclear Fuel Transport Experience

Experience to Date (world wide):

- › > 80,000 tonnes transported
- › > 20,000 used fuel shipments
- › > 30 million km total distance
- › 45 years of safe transport
- › No single incident resulting in radiological impact on people or environment



Thank You!
Walsley
Walsworth
Walsworth
Walsworth
Walsworth
Walsworth

Appendix 3

NWMO Presentation

Moving Forward Together: Process for Selecting a Site for Canada's Deep Geological Repository for Used Nuclear Fuel

Purpose

Provide an update on Adaptive Phased Management Implementation:

- What we heard in recent dialogues about the design of the site selection process
- Refinements to the site selection process made in response to comment
- Initiation of site selection process May 25th, 2010 and next steps.

Background

- In the 2009 Elders Forum, we brought to you a proposed process for selecting a site. This process was developed using the suggestions, comments and direction NWMO received in dialogues in 2008 from the Elders Forum, Niigani, national and provincial Aboriginal organizations, multi-party dialogues other engagement activities.
- In the 2009 Elders Forum you raised some questions and provided some comments on how we might improve the design of the site selection process.
- We are now reporting back to you on how we refined the site selection process in response to these comments.

What we Heard

- » We heard that NWMO needs to provide context and background to the siting process, including information on the following:
 - How did we get here?
 - What is nuclear waste?
 - What is Adaptive Phased Management?
 - Potential for reuse?
 - Should we continue with nuclear energy; produce more waste?
 - Foreign waste?
 - Can waste be safely transported?
 - Protect future generations
- » We heard that the design of the siting process, needs to ensure:
 - Safety of people and the environment
 - Best knowledge, transparency, third party review
 - Inclusion of Traditional Knowledge

- Screening out of unsuitable sites early
- Appropriate principles guide the process
- Involvement of citizens throughout, at the “grass roots” level and not just the political level
- Building of trust, since trust of the nuclear industry is low
- Opportunity for people to learn/ become informed on this issue, since many people have little awareness or understanding
- A community which is interested in the project has the resources it needs and capacity to know its own interest and act upon it
- The host community is willing
- A regional approach is taken, since this large project may affect those outside the host community
- Involve all those potentially affected early. This must include potentially affected Aboriginal peoples. This also must include communities on potential transportation routes
- There is a benefit to the host community. The project must contribute to long-term well-being or quality of life of the community
- Respect for Aboriginal and Treaty Rights
- Proper oversight by government and regulatory authorities who are expert in this area. The project must meet, and if possible exceed, the regulatory requirements
- Involvement of governments throughout, including federal and provincial governments and regulatory authorities
- Process is adaptive and sustainable over the ten or more years required to implement the site selection process
- Contribute to healing of broken or weak relationships

The Siting Process

Comment	Action
Provide greater context and background for the siting process	<ul style="list-style-type: none"> • Added new sections to the site selection process document to provide greater context • Prepared/enhanced short backgrounders; DVDs; toolkits to complement the site selection process document
Safety of people and the environment	<ul style="list-style-type: none"> • First guiding principle for the site selection process is “Focus on Safety” (p. 17) • The nine step process will ensure a stepwise and detailed assessment of safety over a 5 – 8 year period through steps 2 – 4
Include Traditional Knowledge	<ul style="list-style-type: none"> • Key to the process is the inclusion of Traditional Knowledge in both the technical assessment of safety and in the assessment of community well-being • New section added to the document to underline its importance (p. 38)
Ensure best knowledge, transparency, third party review inform the process	<ul style="list-style-type: none"> • Results of stepwise assessment will be publicly available at each step in the siting process • Third party review at each major step • Communities can hire own experts as part of capacity building program

Screen out unsuitable sites early	<ul style="list-style-type: none"> • Refinement of step 2, to ensure earlier input to communities about their suitability
Appropriate principles guide the process	<ul style="list-style-type: none"> • Refinement and addition to principles, to underline the community-driven aspects of the process, community capacity building and benefits
Involve citizens throughout, at “grass roots”	<ul style="list-style-type: none"> • Resources provided to involve citizens in potential host communities at each step beginning in Step 2, and involve surrounding communities and region beginning in Step 3
Build trust	<ul style="list-style-type: none"> • Process is designed to foster a partnership through the implementation of the project • Collaborative process will be used to assess the site and potential to foster well-being over a 5 – 8 year period as part of the site selection process • Collaborative approach will be taken to regulatory review, construction and ultimately operation of the facility
Opportunity to learn/ become informed	<ul style="list-style-type: none"> • Process includes an extended period for communities which are potentially interested in hosting the facility, and surrounding communities, to learn more about the project through the steps of the siting process • Learn more activities continue throughout the entire site selection process
Capacity to know own interest and act upon it:	<ul style="list-style-type: none"> • Resources available to communities potentially interested in hosting the facility throughout the process (Steps 2 – 6)
Ensure willingness	<ul style="list-style-type: none"> • Only willing communities will be considered for the project • Citizens in the community must be willing • Commitment to partnership approach (p. 7), inclusiveness and shared decision-making (p. 18) • Requirements to be met will take shape during the process and reflect the needs of the society at the time the decision on a site is to be made
Regional approach	<ul style="list-style-type: none"> • Recognition that the project will affect a broad region (p. 19) • Commitment to involving the broad region early in the process beginning in Step 3 • Those potentially affected will have opportunity and resources to influence the decision, including through the regional study in Step 4
Involve all those potentially affected early; Aboriginal peoples; transportation communities:	<ul style="list-style-type: none"> • Process encourages involvement of surrounding communities as early as practicable and makes available resources to support this
Benefit to community; contribute to long-term well-being, quality of life:	<ul style="list-style-type: none"> • Commitment to host community benefit(p. 18) • Benefit to be guided by community’s own vision (p. 36) • Broad list of community well-being factors identified from review of evolving best practice (p. 37) • funding for community visioning exercise, to help the community identify its long-term vision for itself, in Step 2
Respect Aboriginal and Treaty Rights:	<ul style="list-style-type: none"> • Commitment to respect Aboriginal and Treaty Rights (p. 18) • Ongoing involvement of national, provincial Aboriginal organizations to support communities which may be interested • Resources provided to communities interested in exploring hosting as well as those in surrounding area • Early involvement in process (Step 3 or earlier)

	<ul style="list-style-type: none"> • Participation in regional study (Step 4)
Proper oversight; meet/exceed the regulatory requirements:	<ul style="list-style-type: none"> • Commitment to meet/exceed regulatory requirements (p. 17) • Involvement of regulators throughout the site selection process beginning with “Getting Ready” step • Regulatory requirements inform each of the early steps of work and are reviewed through the formal and independent regulatory review process at Step 7
Involvement of governments throughout:	<ul style="list-style-type: none"> • Commitment to involvement of governments (p. 18) • Steps have been refined to encourage involvement of governments throughout the process beginning with “Getting Ready” step
Process is adaptive and sustainable:	<ul style="list-style-type: none"> • Siting process is designed as a roadmap to guide the site selection process (p.3) • Includes principles which must be adhered to and steps which must be followed (chapter 5) • Detailed requirements and plans are designed to be developed collaboratively with those involved in the process, those potentially affected, regulatory authorities and others over the course of the 10 year or more process • Siting process will be reviewed periodically to ensure it continues to meet the needs of citizens and refinements will be made to it as required (p. 47)
Contribute to healing:	<ul style="list-style-type: none"> • Willingness, capacity building, collaboration and shared decision-making guide the process • rigorous assessment process over an extended period to ensure the project is implemented in a way to protect people and the environment and contribute to the long-term well-being of the community and region which is host • Process designed to encourage development of a partnership involving all those affected by the project

Next Steps

- Participation in municipal conferences, other events to build awareness and understanding
- Briefings upon request
- Learn More program
- Ongoing development of communication material and tools as we prepare to support communities in exploring their interest in and suitability for this project.