

# NWMO Citizen Panels Report, Phase II: Panel Seven

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**March 2008**

Navigator Ltd.

**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 Social Research**

The objective of the social research program is to assist the NWMO, and interested citizens and organizations, in exploring and understanding the social issues and concerns associated with the implementation of Adaptive Phased Management. The program is also intended to support the adoption of appropriate processes and techniques to engage potentially affected citizens in decision-making.

The social research program is intended to be a support to NWMO's ongoing dialogue and collaboration activities, including work to engage potentially affected citizens in near term visioning of the implementation process going forward, long term visioning and the development of decision-making processes to be used into the future. The program includes work to learn from the experience of others through examination of case studies and conversation with those involved in similar processes both in Canada and abroad. NWMO's social research is expected to engage a wide variety of specialists and explore a variety of perspectives on key issues of concern. The nature and conduct of this work is expected to change over time, as best practices evolve and as interested citizens and organizations identify the issues of most interest and concern throughout the implementation of Adaptive Phased Management.

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### Disclaimer:

This report does not necessarily reflect the views or position of the Nuclear Waste Management Organization, its directors, officers, employees and agents (the "NWMO") and unless otherwise specifically stated, is made available to the public by the NWMO for information only. The contents of this report reflect the views of the author(s) who are solely responsible for the text and its conclusions as well as the accuracy of any data used in its creation. The NWMO does not make any warranty, express or implied, or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information disclosed, or represent that the use of any information would not infringe privately owned rights. Any reference to a specific commercial product, process or service by trade name, trademark, manufacturer, or otherwise, does not constitute or imply its endorsement, recommendation, or preference by NWMO.

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# NAVIGATOR

## NWMO Citizen Panel Report Saint John, New Brunswick

NUCLEAR WASTE MANAGEMENT ORGANIZATION  
SAINT JOHN, NEW BRUNSWICK CITIZEN PANEL REPORT  
MARCH 2008

## **WHAT ARE CITIZEN PANELS?**

Building on previous qualitative research studies, the NWMO contracted Navigator to initiate Citizen Panels in 8 cities across Canada. The goal of the Citizen Panel project was to further explore the feelings, attitudes and perceptions of Canadians toward the long-term storage of Canada's used nuclear fuel.

The Citizen Panel project is markedly different than the qualitative research projects that have preceded it. The intent of the Citizen Panel format used in this project is to allow for the discussion to be formed and driven by the views of the individual Panelists. These Panelists have completed Phase One of the Citizen Panel project where they were introduced to the NWMO and are aware of rudimentary facts surrounding Canada's used nuclear fuel such that an informed discussion can occur.

Phase Two of the Citizen Panel project occurred in Saint John, New Brunswick in January 2008.

## **WHAT IS NAVIGATOR?**

Navigator is a research-based public affairs firm that works with companies, organizations and governments involved in the public policy field.

Navigator has grown to become a diverse firm with consultants from a variety of backgrounds who have excelled in the fields of journalism, public opinion research, politics, marketing and law.

Our strategic approach can be summed up as: *"Research. Strategy. Results."*

# **PANEL REPORT OUTLINE**

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- a. Phase Two Parking Lot questions

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## **1. NWMO CITIZEN PANEL BACKGROUND**

### **a. Citizen Panel**

The Saint John, New Brunswick Phase Two Citizen Panel was held on January 22, 2008 at the Hilton Saint John, a neutral third party facility in downtown Saint John.

The Panel was held over three hours from 6PM – 9PM with 12 Panelists in attendance. Jaime Watt, a Navigator research professional, acted as Discussion Leader.

A general outline of discussion objectives, as well as a discussion document intended to guide the work of the Panel were prepared in advance of the Citizen Panel. Reproductions of the document shown to the Panel can be found at the end of this report as appendices.

### **b. Panelist Profile**













In order to ensure that Panelists speak openly and freely over the course of this research, the individual identities of Panelists will remain protected and not revealed to the NWMO at any point of the project. Contact with Panelists is managed exclusively by a dedicated Panel Manager and each Panelist has been given an identifier code to ensure anonymity in all accessible Panel documents. All personal information and contact reports are stored separately and controlled by the Panel Manager.

While verbatim comments are used through this report, the identification will be only by Panel or by unique Panelist identifier code, but never by name.

Panelists have agreed to offer additional information, including their gender and one additional fact about their lives to make the Panel reporting richer for the reader.



Below are the profiles of the Saint John Panelists by Panelist identifier code:

	City: Saint John Age: 45-54 Gender: Female Occupation: Self-employed, interior decorator		City: Saint John Age: 55-64 Gender: Male Occupation: Employed, plumber
<b>Panelist: SJ-1A</b>		<b>Panelist: SJ-3A</b>	
	City: Saint John Age: 25-34 Gender: Male Occupation: Student		City: Saint John Age: 45-54 Gender: male Occupation: Employed, teaching assistant
<b>Panelist: SJ-4A</b>		<b>Panelist: SJ-5A</b>	
	City: Saint John Age: 55-64 Gender: Female Occupation: Unemployed		City: Saint John Age: 18-24 Gender: Male Occupation: Student
<b>Panelist: SJ-7A</b>		<b>Panelist: SJ-9A</b>	
	City: Saint John Age: 25-34 Gender: Female Occupation: Employed		City: Saint John Age: 45-54 Gender: Female Occupation: Home maker
<b>Panelist: SJ-10A</b>		<b>Panelist: SJ-11A</b>	
	City: Saint John Age: 25-34 Gender: Male Occupation: Employed		City: Saint John Age: 55-64 Gender: Female Occupation: Employed
<b>Panelist: SJ-12A</b>		<b>Panelist: SJ-13A</b>	
	City: Saint John Age: 35-44 Gender: Female Occupation: Employed, hardware lab manager		City: Saint John Age: 25-34 Gender: Female Occupation: Employed, customer service call centre
<b>Panelist: SJ-14A</b>		<b>Panelist: SJ-15A</b>	

### **c. Panel Methodology**

These Citizen Panels have been designed, as much as possible, as collaborative discussions facilitated by a Discussion Leader. They are separate and apart from focus groups in that they empower individual Panelists to raise questions and introduce new topics. The role of the Discussion Leader, in this format, is merely to introduce new topics of discussion and lead the Panel through a number of discussion exercises.

As well, additional measures were incorporated into this Citizen Panel format to empower individual Panelists. Each Panelist was made aware of their independence and responsibilities to both contribute to, and lead, the Panel discussion. A transcriber, traditionally taking contemporaneous notes behind one-way glass or in another room, was placed inside the discussion room. Panelists were empowered to direct him or her to take special note of elements of the Panel discussion they felt were important, or ask him or her to recap any part of the discussion upon request. A commitment was made by the Discussion Leader that the notes taken would be sent to Panelists for review, possible revision and approval, to help Panelists have faith they are in control of the proceedings and ensure their contribution is reflected accurately.

Potential Panelists were originally selected through random digit dialling among a general population sample in the wide area in which each Panel was held. Individuals called underwent a standard research screening survey in which they indicated that they were interested and able to participate in a discussion about a general public policy issue with no advance notice of the specific topic. Individuals were screened to include community-engaged opinion leaders in at least one of these topics: community, environment, and/or public/social issues. Those that passed the screening process were asked to participate in a traditional focus group on the perceived trust and credibility of the NWMO, which allowed an introduction to the topic of used nuclear fuel and topics such as Adaptive Phased Management. The discussions were neutral in tone and did not presuppose any outcome on issues such as nuclear power generation and siting for used nuclear fuel.

At the end of this research study, participants were asked if they would be willing to continue in discussions on the topic of used nuclear fuel. Those that expressed interest were placed on a “short list” of potential Panelists for the four-phased Citizen Panel project. Research professionals at Navigator subsequently used this pool to select Panelists that would ensure a diversity of age, gender and experience in the Panels. Only participants who demonstrated both a willingness and ability to contribute to group discussion and complete exercises were included in the pool. The content of each participant’s contribution in the focus groups was not reviewed by Navigator professionals. Rather, the only qualifiers were that individuals could speak clearly and were able to grasp concepts introduced to them at a basic level.

A target Panel population of 18 was determined for each location in the interest of ensuring the long-term viability of each Panel over the course of four discussions.

Phase One Citizen Panels occurred in late Fall 2007. Although successful in terms of the richness of data collected in all 8 Panel locations, it was clear upon completion of the Panels that it would be necessary to hold Supplementary Citizen Panels in four locations (Toronto, Montreal, Regina and Sault Ste. Marie) due to smaller than expected Panel populations, as well as a difficulty experienced by some Panelists to honour their commitment to attend, as was confirmed on the day of the Panel.

Supplementary Citizen Panels occurred in early January 2008 and consisted of 6 new recruits, selected by random digit dialling, to replicate the experience by which all other Panelists had been selected. New recruits were sent a reading package in advance and then had a one hour “lobby” session immediately prior to the Supplementary Citizen Panel. This session replicated a condensed version of the Preparatory Phase research and allowed for any questions Panelists might have had about the NWMO. Following the “lobby” session, the Supplementary Citizen Panel continued, adding Panelists who had confirmed but, for a myriad of reasons, could not participate in the Phase One Citizen Panels.

Following the completion of the Supplementary Citizen Panels, those that demonstrated a willingness and ability to continue were added to the pool for Phase Two Citizen Panels.

Phase Two Panels occurred in mid to late January 2008. The Panel discussion began with the Discussion Leader asking Panelists if they had thought any more about the NWMO since the last Panel, or if they had just gone back to their daily routines and not given the organization much additional thought. The Discussion Leader then distributed a document for discussion, the Executive Summary of the NWMO’s study *Choosing a Way Forward: The Future Management of Canada’s Used Nuclear Fuel*. The document was given both individual consideration, as well as collective consideration. Individually, Panelists were asked to mark the documents with red and green pens, green indicating they felt a certain point was helpful to their understanding and red indicating that they did not find the point helpful. The intent of the individual document review was to serve as a launching point for further collective consideration and discussion of the more complex strategic objectives of the NWMO. The Panel discussion concluded with Panelists reviewing the answers provided by the NWMO to the questions Panelists had posted in the Parking Lot in Phase One.

Again, Panels were successful in the richness of the data gathered. Furthermore, Panelists have begun to demonstrate a higher degree of ownership in the process with impressive attendance, commitment to the discussion and, in some cases, engaging in extra work, such as assembling their thoughts on paper and seeking out additional information.

This Panel Report is, to the best of Navigator’s abilities, a faithful rendering of the discussion held in Saskatoon and stands alone as a record of the Citizen Panel discussion on January 22, 2008. A larger Aggregate Report on this wave of Panel discussions, including the Panels in Montreal, Kingston, Sault Ste. Marie, Scarborough, Saskatoon, Toronto, and Regina has also been submitted to the NWMO.

## 2. PANEL NOTES

### a. Disclaimer

The attached are contemporaneous notes taken by a transcriber positioned in the room with the Panelists. The transcriber was taking direction from the Citizen Panel on specific points of interest. The following is not an official transcript, but a best effort to capture the sense of discussion with some granularity.

Panel notes will be reviewed by all Panelists, with each having an opportunity to revise (add or subtract) their individual contributions such that it the notes then stand as a clearer rendering of the Panel discussion.

The transcriber for this panel was Courtney Glen, a Navigator research professional.

### b. Panel Notes

Report of the Saint John NWMO Citizen Panel  
Second Meeting  
22 January 2008

#### General Discussion

**[Discussion Leader]:** I'm wondering if after the last group. Did you think any more about the NWMO or did you just go back to everyday life?

SJ-15A                      All through the newspaper. It's been in the newspaper since they shut down the nuclear reactor in Ontario. There was one line in the newspaper last night that said Canada does not have a long term storage plan in place.

SJ-1A                      I was in Mexico right after Christmas and they take news "snippits" from all over the world there and one of the articles was on nuclear power and nuclear waste and how it was a big issue.

SJ-3A                      I did have time to go down and see people who do follow ups on nuclear waste and I was talking to someone there on Monday and she's going to make reference to me of 13 different countries and what they are doing today with their nuclear waste and she was going to go online and find out. She could only give me a short little run on it but she was saying that different countries have their own plans.

**[Discussion Leader]:** Anyone else read about what SJ-15A was talking about?

SJ-4A Only read neutral reporting of what was going on in Ontario but you do get the comments about what Canada is doing overall. The articles weren't directly about nuclear waste.

SJ-15A They were attacking the Conservative government.

**[Discussion Leader]:** Anyone see the connection between the story we are talking about and the NWMO?

SJ-5A Yes, a couple of days ago when the head of the Chalk River facility was fired, it made me think "my goodness, what we're doing here really does have a political aspect." It's unfortunate that it does because invariably the head of the facility knows a lot more about it than the member of the cabinet that fired her. I don't want anyone making those decisions who isn't very well informed scientifically but is someone who is just a appointee.

**[Discussion Leader]:** You think politics was involved in that decision?

SJ-5A Absolutely. I can see the need for it staying open but the head of the facility saw a need to shut it down.

**[Discussion Leader]:** The engineers at Chalk River believed the reactor to be safe and could continue to produce the isotopes that were required. The person that shut the place down was the regulator. We had an engineering dispute – some scientists that said it's good to go and others that said it was not. Because the regulator has the power, the place got shut down. Where people were completely right is that it got resolved by politics. Legislation was passed to overrule the regulator and re-start the facility and then fired the head of the regulatory committee. It seems to me that one of the challenges for us is what happens on these issues when two groups of scientists don't see eye to eye.

SJ-4A With respect to the NWMO, it finally reports to legislators, is it not ultimately responsible to government. How much power does the NWMO eventually have? What makes it legitimate so all this doesn't become a political game no matter what you recommend? Should there not be something in place that makes it a little more difficult than just a vote?

**[Discussion Leader]:** How do you get that result when you have conflicting opinions?

SJ-4A I think in this case there was a result, that's why you have a regulator. Whether it was a right or wrong decision, I'm happy at the resolution. That person was in the scientific

community at least to understand the opinions. You don't want someone who is outside that community.

SJ-1A Better to err on the side of caution.

**[Discussion Leader]:** In this case, there was criticism that the regulator was doing regulatory overkill, and that there was a real cost.

SJ-1A How did she arrive at that decision?

SJ-15A She was the head of an independent organization. She followed them because she wrote them. The fact that the government stepped in was, in my opinion, the right decision. The fact that she was there was good. The newspaper does a very bad explanation of that. I had to do a lot of research. The person that wanted it shut down in the first place is not necessarily the person that should make that decision.

**[Discussion Leader]:** You can imagine as the NWMO moves forward with what they think is the best resolution to this challenge, there may be a time that they come into conflict with others. What horrifies us is when people are being called named in the House of Commons.

SJ-15A When you see a politician overriding scientists just because he's an appointed official...

SJ-3A To me, I feel sorry that she lost her job but I don't think the government should be in on this all. They don't know anything. They sit in their little offices and people that are out there in these industries know it and love it.

SJ-14A The government doesn't make decisions arbitrarily. They have people out there and they really do have to look into it. As a people we tend to negatively look at our politicians but they do look into the details of it, it's not arbitrary.

**[Discussion Leader]:** People have two different perspectives on it. One is saying black and one is saying white. Akin to what would happen if you got two different diagnosis from a doctor.

SJ-14A The big question for me is how immediately threatening the situation. If it's not immediately threatening, you bring in a third party to take a look.

SJ-1A What sort of standard was breached?

**[Discussion Leader]:** I'm told she was asking for an excessively high standard. Maybe that's the right standard for Canada. It wasn't a benign decision, that's what makes this an interesting case to think about. There was an actual cost to shutting this down.

### **Choosing a Way Forward Executive Summary Exercise**

**[Discussion Leader]:** After the last time, I felt like it still seemed important for folks to get more information on APM. I'm going to show you this document. I'd like you to read it and tell me things that you find important and help you understand APM by circling them in green. Things you find not particularly important, I'd like you to circle those things in red.

What did you think?

SJ-4A I thought it was fairly good overall. Fair bit more information than the brochure. Overall I thought it was quite good, quite clear.

SJ-13A It gave me a better understanding of what it's all about, where we're heading, what the goals are. I really fully understand better the phases, why they want to work at a slower pace.

**[Discussion Leader]:** Do you think that's because you've seen it before or how it was presented.

SJ-13A Maybe.

SJ-7A I found it better to understand, other than the odd word.

SJ-15A You have to take into consideration who the audience is, it was part of a report for the government so you have to take that into consideration.

SJ-4A I thought it brought up a few points that the other one didn't, things that I thought they should be mentioning, such as transporting.

SJ-15A That was fantastic. Questions we asked last time and it says in here that we don't know about transportation and that's good.

SJ-4A They made a little comment that the NWMO are neutral in the sense that they are just about the management of waste. They are not a special interest group. They should stay neutral.

SJ-14A I like the fact that it wasn't marketing. I felt like I was getting real information. In the other one, there wasn't as much of a background.

SJ-12A It's much better than the brochure. I was trying to compare when the Act came into effect. Hard to compare because it's 2005. I didn't like the notion of willing host.

**[Discussion Leader]:** At the moment I am interesting in knowing that, as an information document, if it worked or not.

SJ-1A It's clear, it's concise, it brings everything into focus. It suggests how we're going to deal with it and how we're going to move forward.

SJ-9A It was clearer than the other one, it had lots of arrows or boxes. I don't want to see that, I just want to browse over it.

SJ-5A I find myself rather missing some of the illustrations. There were some diagrams that helped clarify. Text without pictures can be difficult to get through. Good that it's not so glossy, that makes one immediately suspicious.

SJ-4A Sentiment of the second paragraph about this generation assuming a responsibility. It gives the organization credibility.

SJ-10A It was by no means a leisure read, but the information was here.

**[Discussion Leader]:** One of the commitments the NWMO makes is a commitment to continue citizen engagement throughout the process. The way to think about what they're doing now is that they were for the first number of years a study organization. They've done that and the recommendation has been approved so they are now an implementing organization. They are in the process of creating their implementation plan. One of the commitments is to do that job together with Canadians, continue to engage them and make sure Canadians support them as they move forward. What do you think that engagement process might look like? What would it have to have? Who do you think the NWMO should involve? How would you know they were living up to their commitment?

SJ-15A Isn't that what this is? Aren't they doing that right now?

SJ-14A Education. Either visiting educational institutes or a question and answer panel.

**[Discussion Leader]:** Do you see a difference between informing and engaging Canadians?



- SJ-14A You can't be engaged if you're not informed first.
- SJ-1A Being more public about what they are proposing. Right now you've asked us to not talk to a newspaper or the public. You can't be engaging if you're not being open about what the focus is.
- SJ-5A I can't help thinking that the one item that would engage public interest is the location of the storage site. That will be huge.
- SJ-13A Get school children involved in research or writing essays which will get parents interested.
- SJ-11A Everything that I've seen in my lifetime, it really doesn't matter what we think. Whatever side you're on that they pick, in the end, what does it matter? I don't know if, in the end, our discussions will make a difference. I don't have any faith that it will. We really don't have an awful lot of say. When it comes down to it, it's going to be done. We as Canadians have become lacksidical because it doesn't really matter.

**[Discussion Leader]:** How would they demonstrate that they were different?

- SJ-11A I don't know because there were always going to be people who agree and disagree.

**[Discussion Leader]:** There's a difference between going through a process with your mind made up and going through without your mind made up and arriving at a conclusion.

- SJ-11A I'm not exactly sure they don't know what the end project actually is.

**[Discussion Leader]:** What can they do to get Canadians engaged and involved in the process?

- SJ-11A It really comes down to where the site is going to be. Obviously reading this, it's either going to be in New Brunswick, Ontario, Quebec or Saskatchewan.

- SJ-14A Or if someone volunteers because there's a real financial benefit.

- SJ-4A To get people engaged, they have to know their opinions will actually be worth something in the end. If you know legally in the end, citizens have a right, people will be more likely to be engaged. Then any more information that you give will be worth it.
- SJ-7A Do a survey.
- SJ-10A Online discussion groups.
- SJ-15A The website is fantastic but what if they had an online forum where within 2 weeks people got back to you with an answer.
- SJ-10A People who have been educated on the topic have to have a place to go. The easiest way would be to have scheduled online discussion groups. Once a month on the website, there would be people there to answer your questions.
- SJ-14A One of the big things right now are webcasts and podcasts. The younger generation is the one that are going to have to live with it so you need to make sure that over the long run those people are really engaged because they are going to have the final say about what's happening. It's impressive the number of knowledgeable people on the internet that post in forums and have discussions because they know that people will see it and comment back.

**[Discussion Leader]:** One of the recommendations made to the government was that the NWMO be adaptive. The recommendation is designed so as to not preclude future generations from making different choices. Given that APM is built around this idea of adaptability, you have to be able to respond to changes. You have to be able to recognize that something's changed and then you have to be able to responded to it. How can they best ensure that they respond to changes and incorporate those new developments in their planning? How do they demonstrate that they are actually being adaptive and responding to technical, environmental or social changes?

- SJ-14A Regular reporting. Not newsletters exactly but things like the summary that detail what has happened over the last year, what changes have been made.

**[Discussion Leader]:** But reporting wouldn't really get at the adaptive component. They are in a tricky spot where they need to get the job done but they need to keep seeing if there is anything out there they should pay attention to.

- SJ-14A When I say reporting, I'm thinking more along the lines of not "this is what we did last quarter" but more "these are the side fields we come across."
- SJ-1A A governing regulatory board to monitor the group.
- SJ-15A Someone out there who has a vested interest in looking at nuclear technology around the world.
- SJ-1A Board should be international so you have Europeans and Americans that are contributing because we are not privy to all information.
- SJ-15A Who does the ongoing research and development they mention in the summary? If they were going to make everything they were doing more public, then that would be enough.
- SJ-4A Not a report from them but a report from a critic. So they could point out improvements. They need a devil's advocate.
- SJ-5A Doesn't the incident at Chalk River suggest that there could be a problem with that.
- SJ-4A Not someone who has a power over decisions but someone who could keep the public up to date. Any environmental group does that whether they are invited to or not to criticize businesses.
- SJ-14A I'm not actually sure they could hide if they want to. I don't think even with the best of people, you could hide not doing what you were committed to in this case. For me, I felt the NWMO was an independent oversight board. They government needs someone who is not the government to do it.
- SJ-1A In the end, there should be someone else just to make sure. I still think it's important to find a use for nuclear waste, there has to be a purpose for it. Fund nuclear scientists and physicists with the funds they talk about and find a use for nuclear waste.
- SJ-14A Those funds are specifically mandated for waste management.
- SJ-1A Then they should find funds.

SJ-14A Reuse is always the best options.

SJ-5A I think there is nothing else today that you can do with it.

**[Discussion Leader]:** There is a consensus in the scientific community that there is no practical way to deal with this stuff other than to store it. While they can imagine a day, they can't see that day. But, Bill Gates is saying in the next 20 years, will learn as much as we have since I've been on this earth. NWMO continues to research. There are two streams: technical and social. They have agreements with universities and organizations around the world, as well as doing research on their own. At the same time, they are doing a social research program to see what Canadians want and value. This is part of that. Another thing they are doing is having a series of panels like this where instead of inviting individuals, they have people representing different groups. Any thoughts on any components to the social research program they should undertake or think about?

SJ-1A How consistent are the concerns and views of the Panels from city to city?

**[Discussion Leader]:** You will be able to see the notes so you can judge for yourself, not really for me to say. I think you'll find it's somewhere from very consistent to highly consistent.

SJ-14A That's actually a good sign.

SJ-5A What is your impression of the views you're hearing here? Would they be as valuable as the views of whatever organization represents nuclear engineers of Canada?

**[Discussion Leader]:** They are very valuable, especially because of the organization's commitment to moving forward and making sure their plan is socially acceptable. As we look at many things we see in our communities, we need to have social consensus in order to move forward. What we're trying to understand as we are a people who are not consumed with this issue all the time, what is it that we need to know to feel comfortable that the people working on it have the right priorities? Are they doing a good job?

SJ-11A You say engaging people, is that going to end at some point? Will that be when they choose a site? Say that they do that and then some European country and comes to Canada and tries to bury their waste here. Are people then going to have a say? Are we going to just take Canadian waste or waste from other countries if we have this storage facility?

**[Discussion Leader]:** Have you read anything that makes you think they will take waste from other countries?

- SJ-14A I can see other countries more likely to take rather than give.
- SJ-11A We've got the land. I can see that being a big issue years down the road. Is there going to be an ongoing social interaction?
- SJ-14A My impression when I read this is that that is what they want. They don't want a mass uprising against what they are going to do.
- SJ-15A They don't want to spend another billion dollars so we can so "nope, I don't think so" in 15 years.
- SJ-14A They want us to feel comfortable giving the negative and positive feedback.
- SJ-5A I trust you are aware of the fact that recently City Council approved the construction of a second oil refinery and an LNG plant. To what extent did you feel that we as Canadians were engaged in those processes? To what extent were we consulted?
- SJ-1A Last week, both my husband and I separately got called and said "by the way, we want to take pictures of your building because we will be running a pipeline through your building." Not asking, telling.
- SJ-10A But weren't there town meetings?
- SJ-1A I know they're going to be there putting it in and I wasn't particularly against it but when you get two calls saying "this is what we're doing, just wanted to let you know." You have no input.
- SJ-15A There's a big difference. With the NWMO we're dealing with a problem we've created. When there's a massive profit, they don't have as much time to get our opinion because they just want to get money.
- SJ-4A It's the feeling that the burden is on the populace to fight the organization and that wouldn't change in this situation because that's just the way it's set up. There has to be a change in the burden of proof. Citizen engagement again, you get the input but when it comes down to the "nitty gritty" things, there is no input or engagement. You want engagement, you put money aside for legal arguments.

**[Discussion Leader]:** The NWMO did that.

- SJ-14A People who want to have a say will.
- SJ-4A Well than promote that! Make it clear that if you have a legitimate legal concern, you'll be able to compete with the organizations wanting to build something in your community.
- SJ-3A I keep on hearing the word urgency. If you look back 50 years, they put Russia in orbit, then man was on the moon. What was there? Money. That brought in the very best people. You have the money, you bring in the best people.
- SJ-15A What you cannot forget is that there is no profit. NWMO is not profiting from any of the outcomes.
- SJ-3A This is up to the government. When money's talking, you'll get the very best people.
- SJ-14A But they have the very best people. I've gone on their website and I've researched who some of the people are and they are the best in their field.
- SJ-1A I think if they decide they are actually going to develop this storage facility, for practicality, it has to be accessible. Maybe not 12 months a year. I would say by road. I see something that is removed 50-75 miles from a populated community so you can drive in, drive out. Engaging the Canadian population to support that, everyone would be happy if it was away from the populated centre if you didn't have to think about the fact that there was a facility close by that could cause problems.
- SJ-14A I didn't know before we started that there was already a facility. I had never thought about it. Now that I know I want to know more. I hadn't thought about the fact that it's just sitting there. I feel better knowing that there is something. It might take 60 years but it's being looked into, it's being developed.

### **Parking Lot Question and Answers Discussion**

**[Discussion Leader]:** What do people think of these answers?

- SJ-13A It's interesting that they didn't have anyone in their 20s in Sault Ste Marie. We have a great range of ages.
- SJ-14A Interesting to think about how they chose us. Very random. I think we're lucky in that our Panel is such a wide range.
- SJ-5A Just a stylistic suggestion, just the first sentence of the first question, I think you want to clarify what you mean by foundations. You don't want to start off with something almost trite.
- SJ-11A One thing I had never thought about was question 9. We're told that the site is going to be in a generating province. It says if the site is chosen in another province, do we then get that waste too and we do. That's not fairness.
- SJ-14A They do say that they are considering those locations and are open to other locations. This is still long term so could change in the next couple years. It is a good question and one that we hadn't really thought about. Question 23 I really liked seeing. As long as the education is there, then informed feedback happens and you see the results of whether or not they're listening.
- SJ-15A I heard someone say that one thing the NWMO had not committed to was safety and this was answered in here. But the fact that it was brought up means it is something they should concentrate on more because they answer this well. This is the first time I've seen it written this clearly.
- SJ-10A I feel like it might have been verbally described in the first Panel. It was a big concern we had last time because we talked about the environment.
- SJ-12A What is Atomic Energy Canada?
- [Discussion Leader]:** Atomic Energy of Canada builds the reactors and owns and operates the facility at Chalk River.
- SJ-14A It's Canada owned versus provincially owned.
- [Discussion Leader]:** What do you think of question 25?
- SJ-15A I think we know what the cons are. Question 34 does a better job of answering it. Question 25 does not.

- SJ-1A I of course assumed they've considered what the cons are.  
It's not up to us to consider.
- SJ-5A The language is oddly vague and bureaucratic.



### **3. PARKING LOT QUESTIONS**

Again in Phase Two, Panelists were empowered to outline any questions they might have that was outside of the current discussion, about a specific matter the Discussion Leader could not address or simply brought up for future consideration on a Post-it note provided and post their question in the “Parking Lot.”

Answers to the Parking Lot questions posted in Phase One Citizen Panels were provided to Panelists in each Phase Two Citizen Panel. Questions asked ranged in terms of quality and appropriateness, but were all answered to the best of the NWMO’s ability.

Again, Panelists were informed that all questions put in the Parking Lot would be answered by the NWMO and provided to Panelists at a future session. The intention of the Parking Lot exercise is to continually empower and encourage Panelists to think of their contributions longitudinally over the life of the Panel.

#### **a. Phase Two Parking Lot questions**

Parking Lot questions from Saint John Phase Two Citizen Panelists were the following:

- Will legislation need to be changed to allow for the transportation of these items?
- What legislation in the entire process is going to be changed?

# APPENDICES

- i. Personnel
- ii. Discussion Leader's Guide
- iii. Discussion document: Executive Summary

## I. PERSONNEL

### **JAMES STEWART WATT, SENIOR DISCUSSION LEADER**

Jaime Watt is Chair of Navigator, a Toronto-based research consulting firm that specializes in public opinion research, strategy and public policy development.

Prior to relocating to Toronto, he was, for ten years, Chair of Thomas Watt Advertising, a leading regional advertising agency and communications consulting firm based in London, Ontario.

A specialist in complex communications issues, Jaime has served clients in the corporate, professional services, not-for-profit and government sectors and has worked in every province in Canada, the United States, the United Kingdom, France, Central America, Korea and Kosovo.

He currently serves as Chair of Casey House, Canada's pioneer AIDS hospice, as well as Casey House Foundation and is a Vice President of the Albany Club. He is a director of the Dominion Institute, Woodrow Wilson Center's Canada Institute, TD Canada Trust's Private Giving Foundation, The Canadian Club of Toronto and The Clean Water Foundation. As well, he is a member of the President's Advisory Council for the Canadian Red Cross and is a member of the Executive Committee of Canadians for Equal Marriage. He was a founding Trustee and Co-chair of the Canadian Human Rights Trust and the Canadian Human Rights Campaign.

### **CHAD A. ROGERS, SUPPORTING DISCUSSION LEADER**

Chad Rogers is a Consultant at Navigator providing strategic planning and public opinion research advice to government, corporate and not-for-profit clients.

He has recently returned to Canada after working abroad with the Washington, DC based National Democratic Institute as director of their programs in Kosovo and Armenia respectively. Chad oversaw multi-million dollar democracy and governance assistance programs directed at political parties, parliaments and civil society organizations in newly democratic nations. He conducted high-level training with the political leadership of Armenia, Bosnia Herzegovina, Iraq, Kyrgyzstan, Macedonia, Moldova and Serbia.

Having previously worked on Parliament Hill as both a legislative and communications assistant to Members of Parliament and Senators, he has an in-depth knowledge of

Canada's Parliament and its committees, caucuses and procedures.

He is a board member of the Kosova Democratic Institute and is a member in good standing of the Public Affairs Association of Canada (PAAC) and the Market Research & Intelligence Association (MRIA). Chad has trained at the RIVA Qualitative Research Training Institute.

### **COURTNEY GLEN, PROJECT MANAGER**

Courtney Glen is a Consultant at Navigator assisting in public opinion research, strategic planning and public policy advice for government, corporate and not-for-profit clients.

Courtney most recently worked at the Fraser Institute as a junior policy analyst in health and pharmaceutical policy. In her time at the Institute, Courtney co-authored a major pharmaceutical policy paper and contributed to their monthly policy journal, *The Fraser Forum*.

Prior to that, Courtney worked as a researcher for the Scottish Labour Party in Edinburgh, Scotland, conducting an audit of the Parliament's Cross Party Group on International Development.

Courtney has a Masters in International and European Politics from the University of Edinburgh in Scotland and a Bachelor of Arts Honours degree in Political Science from the University of Guelph.

### **JOSEPH LAVOIE, PANEL MANAGER (FRANCOPHONE)**

Prior to joining Navigator, Joseph Lavoie worked at Citigroup Global Transaction Services where he improved communications within the Transfer Agency Systems department. Joseph achieved this objective via Web 2.0 technologies, which he previously leveraged in developing Santa's Journal, a successful viral marketing campaign that introduced Santa Claus to the world of blogging and podcasting.

Joseph has been active in numerous provincial and federal election campaigns; has provided political commentary for various websites and television/radio programs; and has served as the recruitment director for the Ontario Progressive Conservative Youth Association. In March 2007, Joseph was selected *Canada's Next Great Prime Minister* by Canadians as part of a scholarship program sponsored by Magna International, the Dominion Institute, and the Canada-US Fulbright Program. He currently serves on the Public Affairs/Marketing Team for the Toronto Symphony Volunteer Committee.

### **STEPHEN LEONARD, PANEL MANAGER (ANGLOPHONE)**

Prior to joining Navigator, Stephen attended the University of Guelph where he graduated with a Bachelor of Arts Honours degree in History. Throughout his undergraduate career, Stephen was an active member of the Canadian Forces Army Reserve in Toronto, which he left in June due to medical reasons as a Corporal.

Stephen is head Panel Manager and plays a vital role in the management and organization of the Citizen Panel project.

## II. DISCUSSION LEADERS GUIDE

### PHASE TWO CITIZEN PANELS

#### DISCUSSION LEADER'S GUIDE

##### 1. OPENING OF PANEL SESSION (0:00 – 0:10)

- Welcome back
- Reminder: Explanation of Panel methodology
- Confidentiality of session
- Explanation of NWMO disclosure of proceedings
  - Re-cap of Panel notes distribution and amendment
  - Feedback from Panel on process of reviewing notes
- Re-introduction of Transcriber
- Re-introduction of Parking lot

##### 2. RE-INTRODUCTIONS (0:10 – 0:20)

- Very brief re-introductions

##### 3. AGENDA & EXPECTATIONS (0:20 – 0:30)

- Reminder: Role of Discussion Leader
- Introduction of Panel Managers

##### 4. GENERAL DISCUSSION (0:30 – 1:00)

- I am wondering if you thought more about the NWMO after our last session, as many people tell me that, despite their best intentions, they just go back to their daily routines without giving it another thought.
- Did any questions you would like to ask come to mind?
- Has anyone read, seen or heard anything about NWMO in the media since our last discussion?

## 5. CHOOSING A WAY FORWARD (1:00 – 1:45)

- You will remember from our last discussion that we looked at the NWMO brochure *Moving Forward Together*. This time, I'd like to share with you an NWMO document which summarizes the key findings from a three year study the NWMO conducted at the request of the Government of Canada called *Choosing a Way Forward*.
- I would like everyone to take a few moments to review the document.
- Did you find this document informative? Clear? Does it include information that you find helpful?

## 6. EXPLORING THE OBJECTIVES OF THE NWMO (1:45 – 2:30)

- On pages 6 and 7 of the Executive Summary, you will see a series of objectives of the NWMO.

### Citizen Engagement

- In the Summary, under the section *Citizen engagement*, NWMO commits to continue to involve a broad range of citizens and experts alike in key decisions in the implementation of Adaptive Phased Management.
  - What do you think a collaborative process between the NWMO and citizens might look like?

### Adaptability

- Adaptive Phased Management is built in part around the concept of adaptability – being able to recognize and respond to changes in society and in our environment more generally.
  - How can NWMO best respond to changes and incorporate new developments into its planning?

### Social and Technical Research

- What, in your mind, might it be important for the technical and social research program to include?

### Trust and Credibility of NWMO's Implementation Plans and Process

- As implementation proceeds, what might cause you to have confidence, and/or lose confidence in the work of the NWMO and its implementation plans or process?

## **7. PARKING LOT QUESTIONS AND ANSWERS (2:30 – 2:50)**

- We committed after the last discussion to get you answers to the questions placed on our parking lot.
- We have done so and are sharing with you not just the answers to your questions, but also from your fellow Panelists in the other 7 Panels.
- Do these answers meet with your expectations?
- Do any other questions come to mind? If so, please jot them down on one of the Post-it notes in front of you and put it in the parking lot.

## **8. WRAP-UP (2:50 – 2:55)**

- As we end our session does anyone have any remaining issues to discuss or questions to raise?
- Panel Management issues

## **9. NEXT SESSION (2:55 – 3:00)**

- Approximate date of next meeting(s)
- Adjourn

### III. DISCUSSION DOCUMENT: EXECUTIVE SUMMARY



# Choosing

# a Way

The Future Management  
of Canada's Used  
Nuclear Fuel

# Forward

A Summary



# Summary

Three years ago, the Nuclear Waste Management Organization (NWMO) launched a mission of developing collaboratively with Canadians a management approach for the long-term care of Canada's used nuclear fuel. We envisaged an approach that would be socially acceptable, technically sound, environmentally responsible and economically feasible. We are convinced that it is time to act decisively.

Canadians believe that our generation must assume responsibility now for the long-term management of the nuclear waste that is produced to supply our energy needs. This is an ethical obligation. Canadians want to be assured that they and their environment will be safe. And, they want a flexible approach that can accommodate new knowledge. The NWMO's assessment of the options, based on the best science and technology at home and around the world, gives us confidence that we have the necessary knowledge to meet these expectations.

The NWMO is recommending that Canada proceed in a deliberate and collaborative way to isolate the used fuel in a deep underground repository. The waste would be safely and securely contained by engineered barriers and the surrounding geology. It would be monitored and remain retrievable over time. Our recommendation recognizes that how the technical method is implemented is crucial. We intend to seek an informed willing host community. The process will be phased and transparent with explicit decision points where citizens are provided with genuine opportunities to influence progress and outcomes. We call our recommendation Adaptive Phased Management.

## The Challenge of Nuclear Waste

For decades Canadians have been using electricity generated by nuclear power reactors in Ontario, Quebec and New Brunswick. We have produced almost 2 million used fuel bundles – about 36,000 metric tonnes of uranium – a number which will double if our 22 existing reactors operate for an average of 40 years each. When used nuclear fuel is removed from a reactor, it is considered a waste product, is radioactive and requires careful management. Although the radioactivity decreases with time, chemical toxicity persists and the used fuel will remain a potential health risk for a very long time.

Ensuring safety and security for material that will remain hazardous for longer than recorded history is a significant challenge – technically and socially. Any decision taken today will be implemented over many decades. Undoubtedly the program will encounter major changes in science and technology, institutions, values and political perspectives, and economic and financial conditions.

Canada's used fuel is now safely stored on a temporary basis at licensed facilities located where the waste is produced. Like many other countries with nuclear power programs, Canada has yet to decide what to do with this used fuel over the long term. That is why the Government of Canada passed a law requiring the owners of used nuclear fuel to create the NWMO. Consistent with the *Nuclear Fuel Waste Act (NFWA)* we engaged interested citizens including specialists, stakeholders and Aboriginal peoples in research and dialogue to assess the options for long-term management.

## Listening to Canadians

Our study was built on a firm foundation – a mission statement integrating the elements of sustainable development; a pre-eminent focus on safety and security; a perspective that takes a long view; a framework of ethics and values; and recognition of the requirement for citizen engagement.

Canadians expect that the best scientific and technical knowledge will be used to understand the risks and identify the technical methods appropriate for used fuel management. However, scientific and technical evidence and analysis, while essential, cannot be the sole basis of our choice. While science can speak to the probability of an occurrence of an event, science cannot speak to social tolerance for its occurrence. The views of Canadian society in judging benefits or risks, and assessing the social implications of various approaches are critical to the development of a socially acceptable recommendation.

Our study was a dynamic and interactive dialogue with thousands of fellow citizens and specialists. Each phase of our analysis was shaped by those conversations and reported in public documents. Through a wide variety of techniques we sought to understand the values of Canadians, have a dialogue with Aboriginal peoples, explore future scenarios, and continually test what we were hearing.

There was common ground. Two important requirements became evident: **the approach must be safe and secure** – for people, communities and the environment; and **it must be fair** – both to current and future generations.

We came to understand that these requirements of safety and fairness have important implications. They mean:

- Our generation needs to take active responsibility to achieve a safe, long-term response to our waste problem – it is imprudent and unfair to wait any longer;
- The plan needs to have a definitive outcome, but also needs to provide flexibility along the way for future generations to make their own decisions;
- We, and future generations, need to be able to monitor the waste to ensure continued safety and be able to access it if safety is compromised or science provides better advice.

Citizens also made their views known about energy policy. The NWMO did not examine or make a judgement about the appropriate role of nuclear power generation in Canada. We suggest that those future decisions should be the subject of their own assessment and public process. Used fuel exists today and will continue to be produced to the end of the lives of Canada's existing nuclear facilities. The focus of our study was to recommend a responsible path forward for addressing its long-term management. Our study process and evaluation of options were intended

neither to promote nor penalize Canada's decisions regarding the future of nuclear power.

#### Assessing the Options

As required by the *NFWA* we compared the benefits, risks and costs of three technical methods: deep geological disposal in the Canadian Shield; centralized storage above or below ground; and storage at nuclear reactor sites. We benefited from the vast base of research conducted in Canada and around the world over more than 50 years.

The framework for our comparison of options emerged from the objectives that Canadians believe to be important: fairness, public health and safety, worker health and safety, community well-being, security, environmental integrity, economic viability and adaptability. It was also informed by the knowledge and expertise of specialists. Our ethical framework resulted in social and technical aspects of safety and risk being treated in a holistic and integrated way throughout the assessment.

Our analysis concluded that while each of the approaches had distinct advantages, no one perfectly addressed all of the objectives which citizens said were important.

The storage options were expected to perform well over the near term; however, existing reactor sites were not chosen for their technical suitability as permanent storage sites. Furthermore, the communities hosting the nuclear reactors have an expectation that used nuclear fuel will eventually be moved. The NWMO believes that the risks and uncertainties concerning the performance of these approaches over the long term are substantial in the areas of public health and safety, environmental integrity, security, economic viability and fairness. A key contributing factor is the extent to which storage approaches rely on strong institutions and active management to ensure safe and effective performance. The NWMO expects that these capacities will be strong over the foreseeable future but uncertain over the very long term.

The deep geological disposal option was judged to perform well against the objectives in the very long term because of the combination of engineered and natural barriers to isolate the fuel. The key weakness, however, is its lack of adaptability, which is an important objective in the minds of citizens. Over the short term, the approach was judged to be less flexible in responding to changing knowledge or circumstances. There is some uncertainty about how the system will perform over the very long term because we cannot obtain advance proof of actual

performance over thousands of years. This approach also provides comparatively little opportunity for future generations to influence the way in which the used fuel is managed. Its lack of adaptability is a weakness that may affect the performance of the system over time on other objectives such as public health and safety and environmental integrity.

This examination led us to develop another approach that incorporates the most significant advantages of the options assessed and is supported by a phased decision-making process designed to actively and collaboratively manage risk and uncertainty.

#### Adaptive Phased Management

The NWMO recommends an alternative approach – Adaptive Phased Management. It consists of both a technical method and a management system. Its key attributes are:

- Ultimate centralized containment and isolation of used nuclear fuel in an appropriate Geological formation;
- Phased and adaptive decision-making;
- Optional shallow storage at the central site as a contingency;
- Continuous monitoring;
- Provision for retrievability; and
- Citizen engagement.

The table that follows describes the concept in greater detail.

#### Representative Conceptual Design Activities for Adaptive Phased Management

Concept	
	<p>A staged management approach with three phases of implementation:</p> <ul style="list-style-type: none"> <li>• Phase 1: Preparing for Central Used Fuel Management</li> <li>• Phase 2: Central Storage and Technology Demonstration</li> <li>• Phase 3: Long-term Containment, Isolation and Monitoring</li> </ul> <p>Phase 1 (approximately the first 30 years): Preparing for central used fuel management would comprise the following activities:</p> <ul style="list-style-type: none"> <li>• Maintain storage and monitoring of used fuel at nuclear reactor sites.</li> <li>• Develop with citizens an engagement program for activities such as design of the process for choosing a site, development of technology and key decisions during implementation.</li> <li>• Continued engagement with regulatory authorities to ensure pre-licensing work would be suitable for the subsequent licensing processes.</li> <li>• Select a central site that has rock formations suitable for shallow underground storage, an underground characterization facility and a deep geological repository.</li> <li>• Continue research into technology improvements for used fuel management.</li> <li>• Initiate the licensing process, which triggers the environmental assessment process under the <i>Canadian Environmental Assessment Act</i>.</li> <li>• Undertake site characterization, safety analyses and an environmental assessment for the shallow underground storage facility, underground characterization facility and deep geological repository at the central site, and to transport used fuel from the reactor sites.</li> <li>• Obtain a licence to prepare the site.</li> <li>• Develop and certify transportation containers and used fuel handling capabilities.</li> <li>• Obtain a licence to construct the underground characterization facility at the central site.</li> <li>• Decide whether or not to proceed with construction of a shallow underground storage facility and to transport used fuel to the central site for storage.</li> <li>• If a decision is made to construct the shallow underground storage facility, obtain a construction licence and then an operating licence for the storage facility.</li> </ul>

Representative Conceptual Design Activities for Adaptive Phased Management	
<p><b>Concept (cont'd)</b></p>	<p>Phase 2 (approximately the next 30 years):                      Central storage and technology demonstration would comprise the following activities:</p> <ul style="list-style-type: none"> <li>• If a decision is made to construct shallow underground storage, begin transport of used fuel from the reactor sites to the central site for extended storage.</li> <li>• If a decision is made not to construct shallow underground storage, continue storage of used fuel at reactor sites until the deep repository is available at the central site.</li> <li>• Conduct research and testing at the underground characterization facility to demonstrate and confirm the suitability of the site and the deep repository technology.</li> <li>• Engage citizens in the process of assessing the site, the technology and the timing for placement of used fuel in the deep repository.</li> <li>• Decide when to construct the deep repository at the central site for long-term containment and isolation.</li> <li>• Complete the final design and safety analyses to obtain the required operating licence for the deep repository and associated surface handling facilities.</li> </ul> <p>There may be a need for transportation containers and facilities to produce them; processing facilities to load the fuel into transportation containers; production facilities for storage containers; and processing facilities to transfer the fuel from transportation to storage containers.</p> <p>Phase 3 (beyond approximately 60 years):                      Long-term containment, isolation and monitoring would comprise the following activities:</p> <ul style="list-style-type: none"> <li>• If used fuel is stored at a central shallow underground facility, retrieve and repackage used fuel into long-lived containers.</li> <li>• If used fuel is stored at reactor sites, transport used fuel to the central facility for repackaging.</li> <li>• Place the used fuel containers into the deep geological repository for final containment and isolation.</li> <li>• Decommission the shallow underground storage facility.</li> <li>• Continue monitoring and maintain access to the deep repository for an extended period of time to assess the performance of the repository system and to allow retrieval of used fuel, if required.</li> <li>• Engage citizens in on-going monitoring of the facility.</li> <li>• A future generation would decide when to decommission the underground characterization facility and any remaining long-term experiments or demonstrations of technology, and when to close the repository, decommission the surface handling facilities and the nature of any postclosure monitoring of the system.</li> </ul> <p>There may be a need for production facilities for used fuel containers; processing facilities to transfer the fuel from storage to the deep repository; and production facilities for sealing materials.</p> <p>The current owners of used fuel would continue to be responsible for its interim management at the reactor sites. The NWMO would assume management responsibility of the used fuel when it is transported from the reactor sites to the central facility for long-term management.</p>

### Implementation

The NWMO will be responsible for implementing the approach chosen. The insights gained and relationships established during our study phase will provide a firm foundation for implementation. Our vision and values will continue to guide us as we strive to gain the confidence of Canadians. Canada has an extensive system of oversight. At a minimum the NWMO will meet all applicable regulatory and licensing requirements; our goal is to exceed them. We must ensure that our security provisions and safeguards are compliant with Canada's nuclear non-proliferation policy and international agreements.

### Citizen engagement

Detailed implementation plans will be designed through dialogue with the many communities of interest who will have important roles to play. We expect to hear a diversity of voices as we seek advice and receive direction on the design of the process and the issues to be explored. In a democratic society, the inclusiveness and the integrity of the process by which decisions are taken are key.

The NWMO will be required to apply for licences to prepare a site, construct, operate, modify, and decommission a nuclear fuel waste facility. We will be required to demonstrate compliance throughout. At each step, there will be opportunity for further public scrutiny.

### Financing

Financial surety means determining what costs can reasonably be expected to be incurred over the lifetime of the project, along with some contingency for unexpected events, and putting in place the financial mechanisms to ensure the necessary money will be available when it is required. The NWMO has an ongoing obligation to assess the accuracy of the cost estimates for the selected management approach and the sufficiency of contributions to cover cash flow obligations for the life of the project.

The *NFWA* sets out requirements for the establishment of trust funds to finance the long-term management of Canada's nuclear fuel waste. A total of \$770 million has been deposited by the waste owners to date. The legislation incorporates explicit provisions that these trust funds will be maintained securely, reported on and used only for the intended purpose.

### Choosing a Location

Although the NWMO is not proceeding with site selection as part of this study, there has been intense interest in the considerations and principles that might influence the process. The NWMO intends to seek an informed, willing community to host the central facilities.

In the interest of fairness, we intend to focus within the provinces that are directly involved in the nuclear fuel cycle – Ontario, New Brunswick, Quebec and Saskatchewan. Communities in other regions and provinces may express an interest and should be considered. The NWMO will respect Aboriginal rights, treaties and land claims.

We propose that the siting process be open, inclusive and fair to all parties, giving everyone with an interest in the matter an opportunity to have their views heard and taken into account. The process will ensure that groups most likely to be affected by the facility, including those who are provided with the forms of assistance they require to present their case effectively.

Placing all of Canada's used nuclear fuel in a single central location will require moving it from current decentralized locations. We will need to demonstrate the safety of any transportation system to the satisfaction of citizens. On the basis of the work which the NWMO has conducted, including commissioning background papers, discussions with nuclear waste management organizations in other countries, and our understanding of regulatory requirements, we are confident that used fuel can be transported safely. The design and development of transportation plans, the mode of transport, routes, security and safety measures and emergency preparedness will require the collaborative efforts of many communities of interest.

### Addressing Social, Economic and Cultural Effects

Implementation presents a significant opportunity to recognize and support a host community's vision for its social, cultural and economic aspirations. There will also be a broader set of interests beyond the immediate host community. Reactor site communities will figure prominently. All potentially affected parties must be afforded fair and equitable treatment in assessing and managing potential significant socio-economic effects.

It will be important to design implementation in such a way as to avoid or minimize disruptive impacts on the many affected communities. Where adverse impacts cannot be avoided, implementation must recognize the

contributions and costs borne by the community through appropriately designed mitigation measures. Risks can be mitigated not only by a variety of physical design features, but through institutional, informational and social measures. That will require developing the capacity for community oversight and empowering the communities to have influence in the process.

#### Research and Intellectual Capacity

As the NWMO implements the Adaptive Phased Management Approach, we will be committed to integrating continuous learning and adapting the plan to new ideas and technology. To do this, there needs to be a vibrant and robust research and development effort during the development and execution of the program.

#### The Recommendation

Adaptive Phased Management tries to find an optimal balance of competing objectives. It embraces the precautionary principle and adaptive management. Societal goals and objectives and successful technology demonstration will determine the pace of implementation. We believe Adaptive Phased Management is the strongest possible foundation for managing the risks and uncertainties that are inherent in the very long time frames over which used nuclear fuel must be managed with care.

- It commits this generation of Canadians to take the first steps now to manage the used nuclear fuel we have created.
- It recognizes that over the long term, it would be imprudent to rely on a human management system alone with its changing forms of institutions and governance.
- It will meet rigorous safety and security standards through its design and process.
- It allows sequential and collaborative decision-making, providing the flexibility to adapt to experience and societal change.

- It provides genuine choice by taking a financially conservative approach, and providing for capacity to be transferred from one generation to the next.
- It promotes continuous learning, allowing for improvements in operations and design that would enhance performance and reduce uncertainties.
- It builds confidence in the technology and supporting systems before the final phase is implemented.
- It provides a viable, safe and secure long-term storage capability, with the potential for retrievability of used fuel which can be exercised until future generations have confidence to close the facility.
- It provides for continuous monitoring and contingency against unforeseen events, either natural or man-made.
- It is rooted in values and ethics, and engages citizens allowing for societal judgements as to whether there is sufficient certainty to proceed with each step.

On the following page is the NWMO's recommendation to the Government of Canada. With a decision about the basic approach the NWMO will then be able to move forward to meet the objective of safely managing Canada's used nuclear fuel for the long term.

The path we propose, built on sound science and technology, is responsible and responsive. Nuclear waste is not a legacy issue we wish to leave to future generations. A decision to act must not be postponed.

*November, 2005*

### NWMO's Recommendation

Our recommendation for the long-term management of used nuclear fuel in Canada has as its primary objectives safety – the protection of humans and the environment – and fairness to this and future generations.

Therefore we recommend to the Government of Canada Adaptive Phased Management, a risk management approach with the following characteristics:

- Centralized containment and isolation of the used fuel in a deep geological repository in a suitable rock formation, such as the crystalline rock of the Canadian Shield or Ordovician sedimentary rock;
- Flexibility in the pace and manner of implementation through a phased decision-making process, supported by a program of continuous learning, research and development;
- Provision for an optional step in the implementation process in the form of shallow underground storage of used fuel at the central site, prior to final placement in a deep repository;
- Continuous monitoring of the used fuel to support data collection and confirmation of the safety and performance of the repository; and
- Potential for retrievability of the used fuel for an extended period, until such time as a future society makes a determination on the final closure, and the appropriate form and duration of postclosure monitoring.

The Nuclear Waste Management Organization would implement this comprehensive approach, in compliance with the *Nuclear Fuel Waste Act (NFWA)* of 2002, and would:

- Meet or exceed all applicable regulatory standards and requirements for protecting the health, safety and security of humans and the environment;
- Provide financial surety through funding by the nuclear energy corporations (currently Ontario Power Generation Inc., Hydro-Québec and NB Power Nuclear) and Atomic Energy of Canada Limited, according to a financial formula as required by the *NFWA*;
- Seek an informed, willing community to host the central facilities. The site must meet the scientific and technical criteria chosen to ensure that multiple engineered and natural barriers will protect human beings, other life forms and the biosphere. Implementation of the approach will respect the social, cultural and economic aspirations of the affected communities;
- Focus site selection for the facilities on those provinces that are directly involved in the nuclear fuel cycle;
- Sustain the engagement of people and communities throughout the phased process of decision and implementation; and
- Be responsive to advances in technology, natural and social science research, Aboriginal Traditional Knowledge, and societal values and expectations.

The NWMO invites all interested individuals and organizations to review our public engagement activities, discussion documents, reports and research on our website at [www.nwmo.ca](http://www.nwmo.ca).

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