NWMO Citizen Panels Aggregate Report: Phase Two

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Navigator Ltd.

nwmo
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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.

NWMO Citizen Panel Aggregate Report Phase Two

NUCLEAR WASTE MANAGEMENT ORGANIZATION

MARCH 2008

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1. NWMO CITIZEN PANEL BACKGROUND

a. Citizen Panel

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 had a brief introduction 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 January 2008.

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

b. 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, in this case, 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 come cases, engaging in extra work, such as assembling their thoughts on paper and seeking out additional information.

2. DISCUSSION SUMMARY

a. Emerging issues since last Panel

The 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 majority of Panelists stated that they had continued to think about the NWMO after the last Panel and many had engaged in discussions with friends, family and/or co-workers about both the NWMO as well as the disposal of used nuclear fuel. The minority of Panelists that shared details of their conversations with others cited that those they spoke with had very little awareness of the topic and, in almost all cases, had not heard of the NWMO. Rather, their conversations would often centre upon the issue of siting.

Few individual Panelists had undertaken specific research since the last Phase, with one Panelist in Montreal assembling their thoughts in a note, another in Scarborough calling the NWMO to request available public documents and others checking the internet for information from various sources, such as environmental groups and news outlets.

The discussion continued with the Discussion Leader asking Panelists if they had read, seen or heard anything about the NWMO in the media since the last Panel. Although Panelists generally said they had not read, seen or heard anything about the NWMO specifically in the media, the conversation in all 8 Panels quickly turned to the issue of AECL, isotopes and Chalk River. While a few Panelists had a lot of relevant information and were familiar with the situation, the majority of Panelists had only a vague understanding with many of the facts not known. Most Panelists were not able to reconcile who was, in fact, to blame for the situation at Chalk River.

Many Panelists were forced to try and reconcile what the root of the disagreement was and if it was informed by a legitimate technical difference of opinion or political interference. The firing of a public servant, which occurred during our study, troubled the majority of Panelists. While Panelists were willing to believe it might have been a cause for dismissal, the notion of political intervention in the affairs of a regulator troubled them. As stated by a Panelist in Kingston, Ontario,

> *What concerns me the most is when a minister with no expertise (in nuclear energy) can overrule and fire an expert in the nuclear field.*

This sentiment was echoed by a Panelist in Sault Ste. Marie, Ontario,

> *When someone's a watchdog and the government gets involved and changes the rules, it makes me a little nervous.*

Some Panelists made a connection between the current situation and what it meant for the NWMO in the future. In the words of a Panelist in Regina, Saskatchewan,

> *I guess it has implications as to how this will be handled in the future. They're trying to set up a system that will be community friendly and if regulators can be overruled by governments…it has serious implications.*

Throughout discussions, Panelists invested a great deal of time trying to identify the point at which they would ultimately feel they had enough information to grant consent for the NWMO to proceed with implementation.

An example from one Panelist in Montreal, which was representative of the opinion of many Panelists, was his relationship with his heart surgeon. He indicated that he clearly understood the degree of informed opinion required to give consent to his heart surgeon, but beyond the binary decision to proceed, he could not give informed consent or direction beyond this point, as he was not technically capable of doing so.

This analogy represents the sometimes challenging journey many Panelists have in determining what the NWMO is actually asking for their consent to proceed with, and how much assurance and/or information they would require to offer or decline this consent.

b. Key points from Executive Summary Review

Panelists were asked to review the Executive Summary of the NWMO study *Choosing a Way Forward: The Future Management of Canada's Used Nuclear Fuel.* The document was chosen as a neutral, informative and concise overview of Adaptive Phased Management, a concept Panelists began to understand in Phase One.

The majority of Panelists found the Executive Summary to be helpful and informative with many even citing that they preferred it over the NWMO brochure reviewed in Phase One. Many felt it was easier to understand than the brochure and far preferred what some deemed as a much "clearer" and "less technical" approach to explaining APM. The chart on pages 4 and 5 of the Executive Summary outlining APM, for instance, was very well received by many Panelists.

A number of Panelists felt that the Executive Summary was not only structured in a way that was far easier to follow than the brochure, but also provided them with a much more satisfactory overview of the what, where, when, how and why in regards to APM. For instance, many Panelists found information about the existence of regulatory oversight helpful and informative, as well as information about funding APM.

Some Panelists commented on how they preferred its use of, what they felt, was more "laypersons language," and simplified approach towards explaining and rationalizing why the NWMO has decided to proceed with APM. In the words of a Scarborough, Ontario Panelist,

> *I liked that it was broken down…we're listening to Canadians, assessing our options and here are our recommendations.*

This sentiment was echoed by a Saint John, New Brunswick Panelist who said the following,

> *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.*

A number of Panelists did acknowledge, however, that their preference and understanding of the Executive Summary might stem from their familiarity and existing knowledge on the subject matter. With the knowledge gained from Phase One discussions, as well as from the website review between Panels, many Panelists felt that their level of understanding had increased a great deal, which might account for why they felt the Executive Summary was easier to understand. As stated by one Panelist in Kingston, Ontario,

> *I thought it was quite helpful. I mean, you know we're not naïve readers anymore.*

A number of Panelists felt the writing in the Executive Summary was slightly more "summarized" than the brochure, largely due to the fact that some perceived there to be much less technical information. Some Panelists felt the document flowed better and, as a result, was far easier to read. As stated by a Panelist in Montreal, Quebec,

> *I think it's a good use of common language at an appropriate level such that it's accessible to the average person. Aside from the odd term or phrase, I think it's easily accessible to the average person. I myself am a layperson and have no background in any of this, and I was still able to understand it.*

Many Panelists felt that the Executive Summary looked less like a public relations document, as it was not glossy, colourful and did not contain many pictures. This was viewed as positive to these Panelists as they much preferred, and were more trusting of the simple and clear layout of the Executive Summary.

A few Panelists expressed concern over the use of the word "fair" in the summary, a concern that was expressed as well in Phase One. Fair, to them, is an ambiguous word, open to a great deal of interpretation. As such, perhaps an alternative word might be more appropriate. In the words of a Toronto, Ontario Panelist,

> *I didn't like the use of the word fairness. It's so incredibly interpretive. I don't think they should use the word fair.*

A number of Panelists, after reading the Executive Summary, questioned the timelines associated with APM, seemingly unable to comprehend how the process would require the amount of time outlined in the Summary. As stated by a Panelist in Regina, Saskatchewan,

> *...that middle step of 30 years. Why is it there? Couldn't you just go to the last step? 60 years is a long time, especially when you're talking construction. We already have the science in place. Why is it taking so long to get there?*

However, when greater detail on the necessity of the timelines associated with APM was provided by the Discussion Leader, a significant number of Panelists were actually able to comprehend why the process would take up to 60 years.

As was the case in Phase One, Panelists struggled with the term "willing host community." Although some Panelists expressed a greater openness to the possibility that, for a number of reasons, a community might be willing to act as "host" to the used nuclear fuel, there was still a significant number of Panelists that perceived the notion of a "willing host" as unrealistic, as choosing a site for used nuclear fuel would inevitably be quite difficult. Furthermore, many Panelists continued to struggle with, what they perceived as, the euphemistic nature of the term "willing host." A number of Panelists expressed some concern as to how a willing host would be determined and whether the selection process would be a socially acceptable one.

"Optional shallow storage" was, again, a point of confusion for a number of Panelists who had a great deal of difficulty comprehending, as it was communicated, why it was necessary. As well, transportation was another issue that a number of Panelists felt was not covered as well as they hoped in the Executive Summary. Some Panelists still had a great deal of questions as to how the used nuclear fuel would be transported and what safety measures would be put in place to ensure that the waste would safely arrive at its destination.

c. Dialogue: Strategic Objectives

i. Citizen Engagement

Panelists were reminded by the Discussion Leader of the NWMO's commitment to engaging citizens in key decisions in the implementation of Adapted Phased Management. This was a natural extension of the discussion of the Executive Summary document.

When asked what they felt a collaborative process between the NWMO and citizens might look like, Panelists balanced the obligation of individuals to ensure that they are themselves informed and that of the NWMO to distribute information, such that citizens can inform themselves. It was generally felt by many Panelists that it would not be possible to fully engage citizens if they were not adequately informed. In the words of a Panelist in Saint John, New Brunswick,

> *You can't be engaged if you are not informed first.*

However, a number of Panelists were realistic that the burden is greater on the NWMO to inform than the citizen to inform themselves, as many thought people might be remiss in taking the time out of their lives to research a topic as complex as used nuclear fuel.

Discussions informally identified three different audiences for information: a broad public audience characterized by a low level of interest, a more informed public audience, of which Panelists would be an example, that would thoughtfully approach the issue and inform themselves over time and, finally, experts and technical professionals, inside and outside of the NWMO who have opinions informed by education and experience greater than that of the average citizen.

Many of the ideas brought forward on how to engage were done so with the second group in mind, as a number of Panelists in all eight cities were repeatedly daunted by the difficulty of the subject matter. In thinking of their own lives, those Panelists expressed that they knew how difficult it would be to get a friend or family member to engage in a discussion on used nuclear fuel without any prior knowledge or exposure to the information. That being said, most Panelists indicated that after they had engaged someone and shared some of what they had learned with friends and family members as a result of being a member of a Citizen Panel, a curiosity was initiated. A significant number of Panelists seemed to feel that initial contact through a friend or acquaintance or some direct local relevance may be required for wide spread public engagement.

As stated by a Panelist in Saskatoon, Saskatchewan,

> *If you have a street and ask [residents] to come to a meeting discussing halfway houses, no one will come. If you say one of the neighbourhood houses will be a halfway house, they will come. To conceptually talk about nuclear waste management, no one will be interested.*

Discussion in all Panels seemed to informally split the notion of citizen engagement between indirect engagement through, for instance, the media, and more direct engagement, whereby discussions would be held with groups of citizens.

When it came to indirect engagement, all Citizen Panels cited the need for reporting in the media, usually in a longer or more "in-depth" form than is found on an hourly newscast or the front page of a newspaper.

Many Panelists felt that direct engagement with groups would be best executed through community seminars and town hall meetings. Town hall meetings were frequently cited as an excellent manner of sharing information and allowing for feedback. As stated by a Scarborough, Ontario Panelist,

> *A town hall is important but it is also important to send them something like this summary so they are more informed and will have questions to ask.*

However, in a number of Citizen Panels, Montreal and Saint John in particular, Panelists felt that there must be some mechanism, possibly a third party, to ensure these consultations are conducted with sincerity and that feedback is used. This sentiment was driven by local experience around consultations for large-scale community projects in which Panelists felt there were deficiencies in how town hall meetings were used. The complaint could be summarized as Panelists not wanting to see an organization conducting consultations just for the purposes of being seen to do so.

When a hypothetical town hall meeting was discussed, some Panelists did indicate they thought it would be difficult to generate general public interest. Unless the issue had a more direct bearing on the local audience, those Panelists felt that the average citizen would either not be interested or be too intimidated by the subject matter. In the words of a Saint John, New Brunswick Panelist,

> *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.*

A hybrid of indirect and direct engagement emerged in some Panel discussions, with the possibility of online forums, information sessions and discussion groups suggested by some Panelists as ways to engage citizens. A number of Panelists thought online engagement, specifically online forums or discussion groups, would allow citizens to directly engage with, for instance, experts or other NWMO officials. Some, however, felt that it would be of great benefit if citizens had some familiarity with the subject matter and, as such, it might be of use to the NWMO to distribute information to citizens. It was acknowledged that it might not be practical to send information to every small community. A number of Panelists did discuss what they felt was the primary advantage of online engagement; that it has collaborative and interactive potential with questions

and comments being responded to and noticed by the NWMO. As was stated by a Sault Ste. Marie, Ontario Panelist,

> *The NWMO could use the Internet…take comments or have basic subject areas, and also leave it open-ended and then make that feedback completely transparent on the website. Anyone can access it, including ordinary folks, supporters and critics.*

A fellow Sault Ste. Marie, Ontario Panelist expanded on this thought,

> *They can put links on websites for the NWMO site on google.com [or] city public sites. They could take an example from APTN, they had a huge 3-4 hour call in talk show so if people had any ideas or questions, they could call in and have people answer their questions.*

As was stated by Panels in Phase One, many Panelists see a role for education, particularly the education of children as the "inheritors" of the process. Some suggested that information on the NWMO and the management of used nuclear fuel be incorporated into public school curricula, or, perhaps, the NWMO organize visits to university campuses in an effort to inform and engage university-aged students. When considering both the scope of APM, its timelines and the burden that the long-term nature of the management of used nuclear fuel will transfer to the next generation, this was seen by many Panelists as a very important part of engaging citizens over time. As well, some Panelists felt that the younger generation is much more open and receptive to new ideas and, as such, might help inform and engage others once engaged themselves. As stated by a Panelist in Scarborough, Ontario,

> *Visit university and college campuses. Kids have the power to sway people and are usually more open-minded to new concepts and ideas. I would use that population to push it through the rest of the population.*

In tackling the issue of how the NWMO might reach out to an audience that might not be interested in the subject matter, or might not make it a priority to inform themselves about it, a significant number of Panelists came back to site selection. As stated by a Panelist in Saint John, New Brunswick,

> *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.*

A number of Panelists felt that citizens will not be engaged until the process becomes tangible in their minds. Only then did these Panelists feel that people will become truly engaged in the process.

Panelists also expressed a variety of tactics that could be employed as part of an engagement strategy. In particular, examples that Panelists had experienced with other

organizations they were involved with or knew of were provided. These tactics ranged from standard communications documents, such as newsletters, to new media tools, such as audio podcasts that could be downloaded at the individual's leisure and provide a deeper education on the issue.

As well, many Panelists felt that the NWMO would be more likely to engage citizens if those citizens had a greater awareness of the organization and APM. As was stated by a Panelist in Scarborough, Ontario,

> *...to bring this forward and have a large element of the community be involved in it, we have to start looking at hiring publicity organizations that make it their business to see that it is an issue that more and more Canadians become involved in. You tend to sit back and say it won't affect me personally and if it's going to go for 60 years, it won't even be in our time. To start thinking long-term, there has to be a strong effort into the daily lives of Canadians.*

ii. Social and Technical Research

When the topic of social and technical research was broached by the Discussion Leader, many Panelists would immediately focus on technical, rather than social research. Priorities such as the re-tasking of used nuclear fuel and staying at the forefront of safety were often cited by Panelists as topics where they felt constant technical research would be required. For instance, a Panelist in Toronto, Ontario would like to see more technical research on,

> *...faster methods of disposal, new uses, recycling instead of just aiming at disposing the stuff.*

Many Panelists iterated that the NWMO had an opportunity, through its partnerships with other countries and academic institutions, to be a leader in research as one of its competencies. Some Panelists suggested that a group of people completely devoted to research and development within the NWMO would significantly increase the organization's credibility in the eyes of the general public. However, when asked what that research and development might look like, these Panelists would often cite research of a technical, rather than social nature.

When prompted by the Discussion Leader, Panelists in all 8 Citizen Panels identified social research as a priority and inexorably tied to citizen engagement. Social research was seen as an extension of engagement in that it should serve as another tool that serves to build a dialogue between the NWMO.

An example frequently cited by a number of Panelists that straddled both objectives was the use of surveys. Questionnaires in the form of polls, internet surveys or other forms of surveys delivered in person were seen as not only a tool for public engagement but also a necessary undertaking for the NWMO to ensure they understand public opinion and manage accordingly.

Panelists also saw social research as being something that the NWMO could task environmental and community groups to conduct on their behalf, such that the work could be designed and presented independently to further offer the NWMO an unbiased view of public opinion. In the words of a Panelist in Saskatoon, Saskatchewan,

> *Set up periodical review processes with various stakeholders. You would have a meeting forum where they would present their work and research and show results. Just like annual financial reporting.*

Each Citizen Panel cited the current form of discussion, namely the Panel itself, as a good model for social research, in that they were permitted space to learn and discuss their evolving views.

In both the current Phase Two discussion, as well as Phase One, a number of Panelists identified the importance of learning from the experience of other nations when it comes to safely storing waste. Many felt that this should extend to the NWMO's social research program. As stated by a Toronto, Ontario Panelist,

> *...because it is global, one of the first things they could do would be align themselves with France, Sweden and have a close dialogue, come up with a global council.*

iii. Adaptability

After reviewing both the previous brochure in Phase One and the Executive Summary document in this phase, the majority of Panelists expressed that they were starting to grasp the basic components of Adaptive Phased Management. As discussion began about adaptability, a lack of understanding in terms of why shallow storage might be necessary and the difficulty in attaching meaning to the term "characterization facility" was raised by a number of Panelists.

The timeline of 60 years was difficult to comprehend for a majority of Panelists. There was a feeling that the timeline was not necessarily realistic and that the project could proceed at a faster speed with increased resources, as suggested by a number of Panelists. When challenged on this view by the Discussion Leader, indicating that safety and regulatory undertakings would require this much time, many Panelists expressed a greater understanding of why a timeline of 60 years was necessary.

Most Panelists were comfortable with an approach that adapts over time, but also wanted to be sure that there would be transparency in the adaptability as well. All changes would need to be made transparent and be accompanied by some analysis of why they were made and their potential impact on society. The sense of some Panelists here was that if the approach changed dramatically, some consent would have to be obtained from the public, but, in terms of the actual scope of adaptability, some Panelists were not sure what that might mean. This is an example of an area where a lack of information prevents

some Panelists from identifying what might be required to grant consent to proceed with a long-term storage solution.

Research and development well into the future remains a priority for many Panelists, as they see the future re-tasking of used nuclear fuel as being likely in the future. A number of Panelists would like to see a process, invented in future, which either makes the used fuel valuable once more or, in some way, renders it significantly less harmful. In a number of Citizen Panels, the view of many Panelists was that the NWMO must invest in scientific research on an ongoing basis to continue to explore the possibility of rendering used nuclear fuel less harmful or recycling it such that the long-term storage solution might no longer be needed or needed for a shorter period of time. In the words of a Toronto, Ontario Panelist,

> *When they mention [retrievability] that means to me that they can go get them if something better comes along. To prove to me that they are looking to other areas, do they have a research and development arm? They could communicate that they have a research and development arm.*

Many Panelists also felt that the adaptability approach should also monitor the best technological approaches around the world, and appropriate if necessary.

As stated by a Panelist in Toronto, Ontario,

> *On the website, they could not just have the R&D people, but links to other organizations to show this is what's going on in France, etc. It shows that they are looking at other options, people are doing other things but we've decided to go with this way because it's the best way to go.*

There remains significant difficulty in grasping the concept of adaptability for a minority of Panelists, many of whom wanted to further debate underground storage even after they were informed a decision on the overall approach has been made and, in fact, the interim step of shallow storage is an optional component of Adaptive Phased Management.

iv. Trust and Credibility

Panelists were reminded by the Discussion Leader of the importance the NWMO places on the public's perception of the NWMO as a credible and trusted organization. While the discussion that followed was influenced by the healthy scepticism that many Panelists, and Canadians in general, have of large companies and government, Panelists wrestled with how to trust an organization that would manage used nuclear fuel on their behalf. When the discussion turned to timelines or other facts that communicated the scope of the NWMO's work, one of the reservations that emerged was the question of whether or not trust is granted all at once to proceed and how, with an ongoing process, the public's trust remains an important aspect of the decision-making process. For instance, a small number of Panelists asked whether or not any incidents involving a threat to public safety, which would presumably occur on a small scale over time on a

project as large as APM, would be reported in a transparent way, so that citizens would both be aware of the incident, as well as the NWMO's response and any future change in practice as a result. Those same Panelists wondered whether or not this could be done without scaring people and if they themselves would want to be informed.

A number of Panelists, in the general discussion at the start of the Panel, expressed a difficulty in reconciling whom to trust during the media coverage of the issues surrounding Chalk River and isotopes, as they were only nominally familiar with the players involved. When the discussion of the NWMO's strategic objectives laid out in the Executive Summary turned to these issues, it became clear that Panelists felt more information about the NWMO was necessary. Panelists felt that it is far more difficult to trust someone or something they do not know. Thus, in hypothetical situations in which the NWMO might face challenges or hardship in the future, comparable to Chalk River today, a number of Panelists expressed that they would be far more likely to trust something or someone they know.

In the words of a Kingston, Ontario Panelist,

> *You need to establish a relationship before any problems can be solved with any sort of trust or faith. They need community partnerships. They need a base of support from provincial and federal government. They need someone to help make a partnership with Canadians and not just focus groups. They need interactive mall displays, something people can sink their teeth into.*

A Scarborough, Ontario Panelist expressed a similar thought,

> *We need a face to put to the topic that becomes a part of our social norm. We know the face of our Prime Minister so we know what to expect. We need either a face or a bunch of faces [that are associated with the NWMO].*

At the conclusion of Phase One, Panelists were asked to review the NWMO's website. A minority indicated that important to their assessment of the trustworthiness and credibility of the organization, at least in terms of transparency, was evidence that the website was updated regularly and even frequently. Those who recalled visiting the website discussed the lack of updated content reflecting the work of recent months which left them wondering what the threshold was for reporting work to the public.

An extension of transparency again was the need, identified by a number of Panelists, to have third party advocates and/or critics. These Panelists, if anything, expanded their ideas about having a third party advocate as the discussion ensued, not visualizing just one person or entity but an institutionalized role for constructive candour, disagreement and observation.

As stated by a Panelist in Kingston, Ontario,

> *Each component [of the NWMO] should be separate. Each component should report its own findings and discoveries and has to be able to report to the public independently of each other.*

A further statement on the desire to see a third party advocate and/or critic was made by a fellow Kingston, Ontario Panelist,

> *You could also have a regulatory commission that has to report once a year…all the new developments and their pros and cons.*

As Panelists brainstormed about what kind of third party would be involved, prominent environmentalists were named as well as more general professions, such as those engaged in scientific research. The role envisaged by some was one of a person or people who potentially had a different perspective than the NWMO, and were tasked with presenting competing views on how to continue with implementation. This was not because the NWMO would be seen to be deficient, but to ensure that, on an issue as important as this, the leadership of the organization would be constantly challenged. This was another interesting manifestation of how many Panelists are increasingly trying to negotiate the manner in which they give the NWMO their consent to proceed and, it seems like many would like to see that consent monitored on their behalf by informed, neutral parties.

When the Panel discussed how the NWMO might engage citizens, they brought to the fore many ideas on communications tactics they felt would touch their lives. They have additionally said that trust might require a greater depth of knowledge and awareness of the NWMO. When the discussion turned to trust, they additionally introduced the notion of a brand. Panelists, individually in a number of Panels, cited the word "brand" and indicated in their experience those large organizations they were familiar with had spent much effort through many media to get their attention. In the words of a Kingston, Ontario Panelist,

> *As an organization, they need brand and name recognition before there is a problem. Commercials, public service announcements, print media, public relations opportunities…*

d. Discussion surrounding the answers to Parking Lot questions from Phase One Panels

Again in Phase Two, Panelists were empowered to outline any question 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.

Panelists were provided with a document outlining answers to the Phase One Parking Lot questions in all 8 locations. Many Panelists expressed appreciation that the questions had been answered and were pleased at the NWMO's legitimate effort and commitment to the type of interactive dialogue Panelists have repeatedly cited in discussions as something they would like to see.

Upon review, a number of Panelists felt that the answers provided were, generally, sufficient and informative. However, some Panelists, although not a majority, voiced some criticism of what they perceived to be "bureaucratic" language used in some of the answers to the questions. Any language that Panelists felt sounded like "it was written by a politician" was not well received. A number of Panelists expressed a desire to see straight forward and direct answers in simple language.

Few Panelists perceived some of the answers provided to be incomplete which, in few cases, was perceived as merely avoiding answering the questions asked. As was mentioned by a Panelist in Kingston, Ontario,

> *…they don't give you a straight answer. They should just say "we don't know." They speak in vague generalities. They don't tell you that they don't know. If they want to start out by being credible, they can't answer questions like this.*

Panelists prized depth and accuracy more than a communications effort. As such, a number of Panelists were quite willing to accept that some of the questions asked were difficult to answer and might require more time or a technical response.

When asked by the Discussion Leader, there would be consensus among Panelists in all 8 Panels that an admission on the part of the NWMO that they don't currently have an answer to a question asked, but will have that answer in the future, was not only preferred but, as was stated by one Panelist in Scarborough, Ontario, part of ultimately being adaptive.

> *Overall, I think we have to know that they don't necessarily have the answers, that's what adaptive is. As long as they can be honest and up front, then that's good.*

3. ISSUES ARISING FROM PANEL DISCUSSIONS

a. New Parking Lot questions from the Panels

Sault Ste. Marie

- How do you cap the deep stored uranium?
- Seems to be many business people in the board, maybe more scientists needed?
- What if sites are maxed out? Who decides where next?
- We have to deal with waste but if we don't have answers why push forward?
- Can metallic receptacles be devised to stop any prospective leakage? Titanium?
- Have they developed the transport container systems yet? If so what do they look like?
- Can Google.ca and other sites that are popular to the public create links on their main pages so that people can know about the www.nwmo.com site?
- Deep depository, how deep is deep?
- If other countries use our isotopes why won't they store our waste too?
- What are the dollar costs of NWMO proposals?
- How much atmospheric carbon would be generated by each of the proposals?

Kingston

- Does the NWMO have a marketing/public outreach department?

Scarborough

- If stored in shallow area prior to deep hole would that bypass environmental study?
- Why are other countries repository target service dates much closer than ours?

Saskatoon

- What happens to the deep/shallow facilities if there is an earthquake?
- What are the potential security risks to a deep storage/shallow storage site?

Regina

- Do the NWMO meet globally? How often? Is there a study or a memorandum regarding minutes?
- Still have concerns about funding these phases. How can the NWMO truly ensure those who create the waste will continue to fund the phases and future storage requirements?
- NWMO, how do you determine funding when there are so many variables?
- Radioactivity decreases with time; how much time? Do scientists already know?
- "Used fuel will remain a health risk for a long time" How long?
- Why will it take so long to get all of this done and the waste in the deep storage?
- I saw on the NWMO website that the last brochure that we reviewed and critiqued (as bad) is available to order to the public. Why?
- Why not make up the board or directors with more scientists?

- Can the NWMO recommend the end of nuclear usage? If problems with disposal/storage.
- How long is a reactor good for?
- Where do we (Canada) stand in the whole world as to disposal of NW? Are we trailing or leading?

Saint John

- 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?

Toronto

No parking lot questions.

Montreal

- In the 50-year history of nuclear development in Canada, what have we done to manage the waste?
- Does the NWMO have a current project to manage the current problem?
- What is the security during transportation (of the waste)?

b. Panel work plan

Phase Three Citizen Panels: April 2008

April 15, 2008	Regina Citizen Panel Regina, Saskatchewan
April 16, 2008	Saskatoon Citizen Panel Saskatoon, Saskatchewan
April 17, 2008	Toronto Citizen Panel Toronto, Ontario
April 19, 2008	Kingston Citizen Panel Kingston, Ontario
April 22, 2008	Saint John Citizen Panel Saint John, New Brunswick
April 23, 2008	Montreal Citizen Panel Montreal, Quebec
April 24, 2008	Sault Ste. Marie Citizen Panel Sault Ste. Marie, Ontario
April 28, 2008	Scarborough Citizen Panel Scarborough, Ontario

Phase Four Citizen Panels: June 2008

June 3, 2008	Regina Citizen Panel Regina, Saskatchewan
June 4, 2008	Saskatoon Citizen Panel Saskatoon, Saskatchewan
June 5, 2008	Toronto Citizen Panel Toronto, Ontario
June 7, 2008	Kingston Citizen Panel Kingston, Ontario
June 10, 2008	Saint John Citizen Panel Saint John, New Brunswick

June 11, 2008	Montreal Citizen Panel Montreal, Quebec
June 12, 2008	Sault Ste. Marie Citizen Panel Sault Ste. Marie, Ontario
June 16, 2008	Scarborough Citizen Panel Scarborough, Ontario

APPENDICES

i. Profiles of the Panels
ii. NWMO Executive Summary: Graphic Analysis
iii. Navigator Personnel
iv. Discussion Leader's Guide

I. PROFILES OF THE PANELS

Regina, Saskatchewan

Date:	January 16, 2008
Facility:	Qualitative research facility in Regina
Discussion Leader:	Jaime Watt
Transcriber:	Courtney Glen
Number of Panelists:	17

Saskatoon, Saskatchewan

Date:	January 17, 2008
Facility:	Qualitative research facility in Saskatoon
Discussion Leader:	Jaime Watt
Transcriber:	Courtney Glen
Number of Panelists:	13

Kingston, Ontario

Date:	January 19, 2008
Facility:	Qualitative research facility in Kingston
Discussion Leader:	Jaime Watt
Transcriber:	Stephen Leonard
Number of Panelists:	14

Toronto, Ontario

Date:	January 21, 2008
Facility:	Qualitative research facility in Toronto
Discussion Leader:	Jaime Watt
Transcriber:	Courtney Glen
Number of Panelists:	18

Saint John, New Brunswick

Date:	January 22, 2008
Facility:	Qualitative research facility in Saint John
Discussion Leader:	Jaime Watt
Transcriber:	Courtney Glen
Number of Panelists:	12

Montreal, Quebec

Date:	January 23, 2008
Facility:	Qualitative research facility in Montreal
Discussion Leader:	Daniel Meloche
Transcriber:	Leger Marketing
Number of Panelists:	17

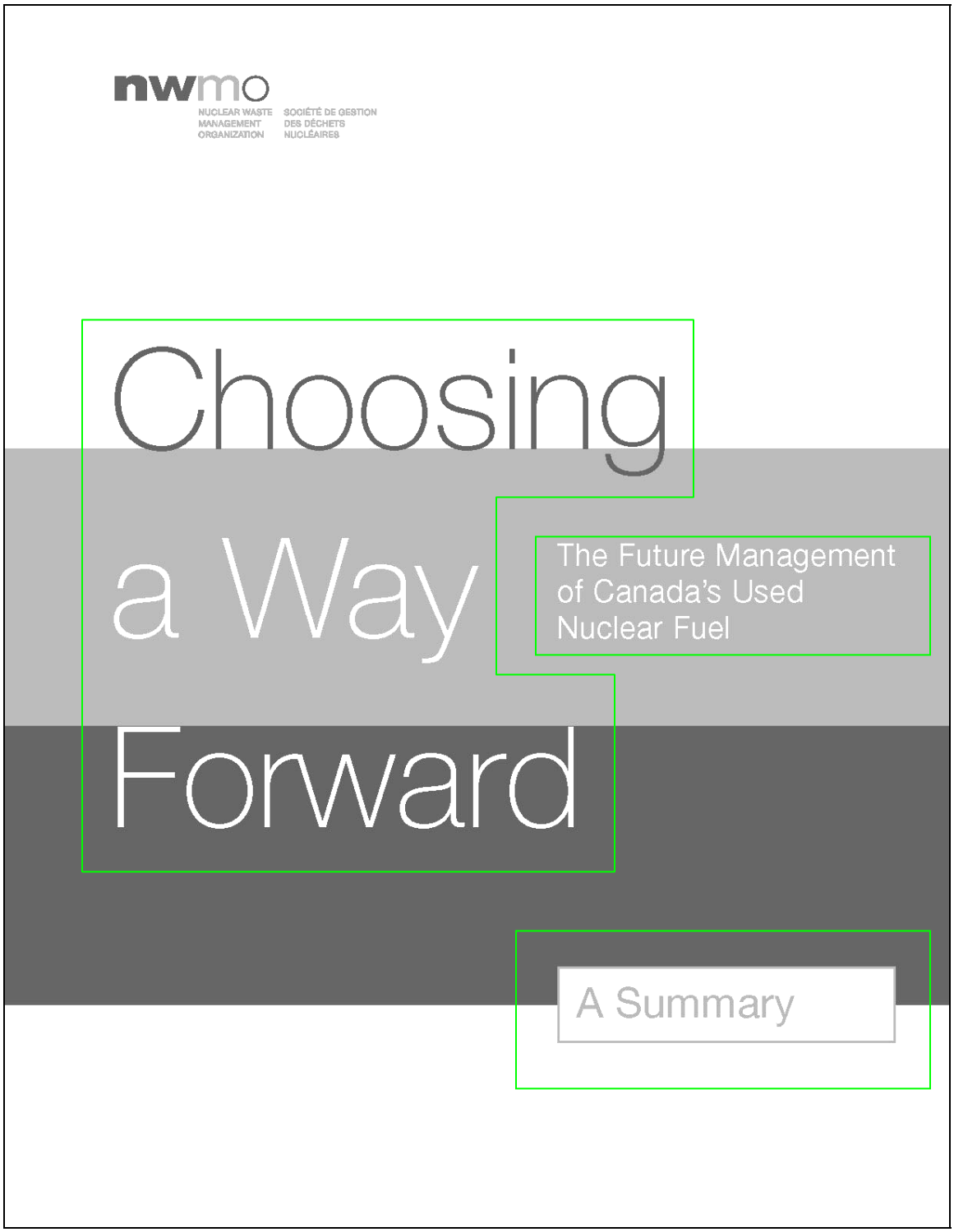
Sault Ste. Marie, Ontario

Date:	January 24, 2008
Facility:	Qualitative research facility in Sault Ste. Marie
Discussion Leader:	Jaime Watt
Transcriber:	Courtney Glen
Number of Panelists:	16

Scarborough, Ontario

Date:	January 29, 2008
Facility:	Qualitative research facility in Scarborough
Discussion Leader:	Jaime Watt
Transcriber:	Courtney Glen
Number of Panelists:	15

II. NWMO EXECUTIVE SUMMARY: GRAPHIC ANALYSIS



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 safety 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 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	
	A staged management approach with three phases of implementation: • Phase 1: Preparing for Central Used Fuel Management • Phase 2: Central Storage and Technology Demonstration • Phase 3: Long-term Containment, Isolation and Monitoring Phase 1 (approximately the first 30 years) Preparing for central used fuel management would comprise the following activities: • Maintain storage and monitoring of used fuel at nuclear reactor sites. • 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. • Continued engagement with regulatory authorities to ensure pre-licensing work would be suitable for the subsequent licensing processes. • Select a central site that has rock formations suitable for shallow underground storage, an underground characterization facility and a deep geological repository. • Continue research into technology improvements for used fuel management. • Initiate the licensing process, which triggers the environmental assessment process under the *Canadian Environmental Assessment Act*. • 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. • Obtain a licence to prepare the site. • Develop and certify transportation containers and used fuel handling capabilities. • Obtain a licence to construct the underground characterization facility at the central site. • 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. • 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.

Representative Conceptual Design Activities for Adaptive Phased Management	
Concept (cont'd)	Phase 2 (approximately the next 30 years): Central storage and technology demonstration would comprise the following activities: • 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. • 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. • Conduct research and testing at the underground characterization facility to demonstrate and confirm the suitability of the site and the deep repository technology. • Engage citizens in the process of assessing the site, the technology and the timing for placement of used fuel in the deep repository. • Decide when to construct the deep repository at the central site for long-term containment and isolation. • Complete the final design and safety analyses to obtain the required operating licence for the deep repository and associated surface handling facilities. 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. Phase 3 (beyond approximately 60 years): Long-term containment, isolation and monitoring would comprise the following activities: • If used fuel is stored at a central shallow underground facility, retrieve and repackage used fuel into long-lived containers. • If used fuel is stored at reactor sites, transport used fuel to the central facility for repackaging. • Place the used fuel containers into the deep geological repository for final containment and isolation. • Decommission the shallow underground storage facility. • 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. • Engage citizens in on-going monitoring of the facility. • 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. 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. 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.

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 through transportation, 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.

or contact us at:
Nuclear Waste Management Organization
49 Jackes Avenue
Toronto, Ontario
Canada M4T 1E2

Telephone: 416.934.9814
Toll free: 1.866.249.6966

Design: Hornby & Woolley Inc. www.hornbywoolley.com

III. NAVIGATOR 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.

IV. DISCUSSION LEADER'S 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

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