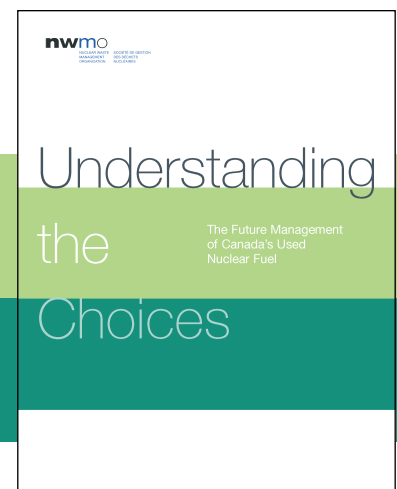


Roundtable Outcomes Report

Implementing a Strategy for the Long-term Management of Used Nuclear Fuel

Public Policy Forum



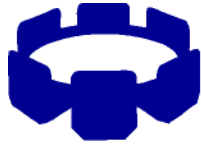
Discussion Document 2: Understanding the Choices

The NWMO has committed to using a variety of methods to dialogue with Canadians in order to ensure that the study of nuclear waste management approaches reflects the values, concerns and expectations of Canadians at each step along the way.

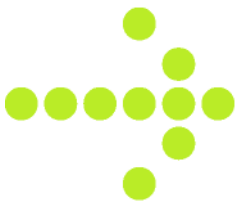
A number of dialogue activities have been planned to learn from Canadians whether the elements they expect to be addressed in the study have been appropriately reflected and considered in Discussion Document 2. Reports on these activities will be posted on the NWMO website. Your comment is invited and appreciated.

Disclaimer

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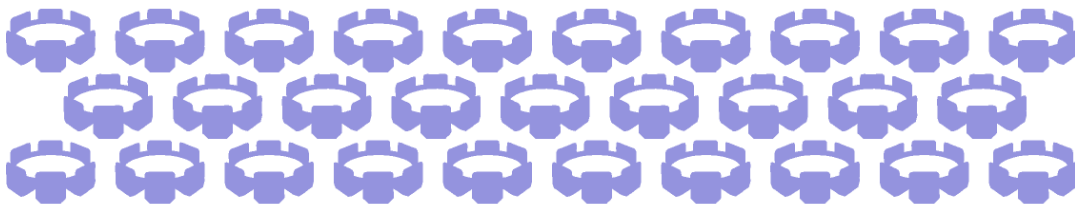
Public Policy Forum
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Implementing a Strategy for the Long-term Management of Used Nuclear Fuel

Roundtable Outcomes Report

December 6, 2004



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ABOUT THE AUTHORS

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ACKNOWLEDGEMENTS

The Public Policy Forum organized this roundtable with the financial support of the Nuclear Waste Management Organization.

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EXECUTIVE SUMMARY

On December 6, 2004 the Public Policy Forum held a roundtable with senior opinion leaders from the private and non-profit sectors who were asked to comment on potential elements of an implementation plan that would ensure that Canadians would be confident in the long-term solutions undertaken to manage nuclear fuel waste. The roundtable gave opinion leaders the opportunity to provide insight to NWMO on:

- € policy challenges and opportunities;
- € characteristics of a successful implementation policy; and
- € designing institutions for public confidence.

Policy Challenges and Opportunities

The policy challenges the NWMO face in developing options for managing nuclear fuel waste, and the policy challenges associated with implementing those options include:

- € *Regionalism* — Participants suggested that regionalism will likely become an important factor when attempting to implement a management approach. Participants warned that many western Canadians might not want to store nuclear fuel bundles, which for the most part originate in Ontario (the province where most nuclear fuel waste is generated).
- € *Rural/Urban Split* — It was noted that any solution would most likely have a disproportionate impact on rural residents, especially if centralized storage or deep-geological disposal is proposed.
- € *Transportation* — Canadians will need guarantees that nuclear materials are transported safely.
- € *“Not in my backyard”* — Ultimately, no Canadian would want to host nuclear waste in his or her neighbourhood.
- € *Political Dynamite* — This issue is so unpopular that some politicians might have to sacrifice their political careers in order for action to be taken in this area.

Participants also identified several events that could affect the landscape in which the NWMO study is considered in the next decade, including:

- € *A growing sense of awareness and public attention on broader energy questions* — Participants felt public attention would grow for the following reasons: 1) Potential future energy shortages; 2) an inevitable end to Toronto’s practice of sending its garbage to the U.S.; and 3) as babyboomers age they will likely begin to question the impact of their practices on future generations.
- € *Terrorism* — Some participants felt that a management strategy should consider the threat of a possible terrorist attack. It was also noted that the U.S. has focused on security concerns as a key driver for the long-term management of used nuclear fuel.
- € *Parallel International Solutions* — As other countries begin to identify solutions, it is possible that the solutions proposed by the NWMO could be reinforced and

supported internationally.

Characteristics of Successful Implementation Policies

Participants identified several characteristics that are essential to ensure that an implementation strategy is acceptable to Canadians:

- ∅ Use an incremental approach;
- ∅ Provide incentives and appropriate risk management to communities;
- ∅ Keep wider ethical debates in mind;
- ∅ Allow technologies to evolve;
- ∅ Separate the debate about waste management from power generation;
- ∅ Use language that encourages individual accountability as Canadians; and
- ∅ Communicate expert advice effectively.

Designing Institutions for Public Confidence

Participants were invited to suggest approaches for governance and oversight to support the implementation of a long-term management approach. These approaches had the following characteristics:

- ∅ *Democratic and Transparent* — Institutions must be designed to reflect and remain in tune with public opinion. They must continuously engage and be accessible to citizens.
- ∅ *Local Involvement* — Communities at the site (or sites) should be involved in the management and oversight of nuclear waste facilities.
- ∅ *Independent Third Party Structure to Ensure Accountability* — Participants suggested that oversight structures need to be created at both local and national levels.
- ∅ *Expert-run and Managed Facilities* — Governments should ensure that local facilities are expertly run and managed.
- ∅ *Adaptive Management* — Facilities would have to be managed with flexibility over the long-term so that new technologies and new approaches can be incorporated.
- ∅ *Ensure Mechanisms are in Place to Deal with Accidents* — Citizens need assurance that whatever implementation strategy is adopted, the government is able to respond to accidents or threats to nuclear waste in their communities.

IMPLEMENTING A STRATEGY FOR THE LONG-TERM MANAGEMENT OF NUCLEAR FUEL

Introduction

Twelve percent of Canada's electricity is generated by nuclear power. Although this type of power generation does not produce greenhouse gas emissions, it does produce nuclear fuel waste, which is stored in bundles at reactor sites. As of December 31, 2001, Canada had produced 1.6 million used fuel bundles, enough to fill a soccer field about 1.3 metres high.¹ If Canada continues to use nuclear power at the same rate, it is expected that by 2033 there will be a total of 3.6 million used fuel bundles.² These nuclear fuel bundles can be radioactive for thousands of years.

Continuing to store the nuclear bundles at reactor sites is one of many possible solutions to manage used nuclear fuel. Other methods include centralized storage (above or below ground) and a deep geological repository. Issues such as safety, the environment, security, transportation and cost considerations need to be examined before a long-term management plan can be put into action.

In the 1980s there appeared to be consensus among scientific experts that deep geological storage in the Canadian Shield was an appropriate technical solution. However, the Seaborn Report in 1998 confirmed that although the safety of a deep burial concept has been on balance adequately demonstrated for a conceptual stage of development, the case had not yet been made from a social and ethical perspective. All of the options for long-term waste disposal need to be revisited from this perspective.

The federal government passed the *Nuclear Fuel Waste Act* which led to the creation of the Nuclear Waste Management Organization (NWMO) in 2002. This organization is mandated to manage a consultation process that will result in recommendations for the long-term storage of used nuclear fuel produced by Canada's electricity generators.³

NWMO is tasked to recommend a "management approach" which is more than a technical method of storage or disposal. It requires a fully developed implementation plan, consultation plans, long-term administrative, legal and financial arrangements, independent review mechanisms and proposals for avoiding or mitigating negative socio-economic effects on a community's way of life or aspirations.

The challenge for NWMO is to ensure that the recommendations proposed are "socially acceptable, technically sound, environmentally responsible, and economically feasible."⁴ While NWMO is not to recommend a site for implementation, it is to specify economic regions where it might be appropriate to implement the different approaches.

¹ *Nuclear Fuel Waste in Canada, Fact Sheet*. Available at: <http://www.nwmo.ca/default.aspx?DN=179,177,20,1,Documents>

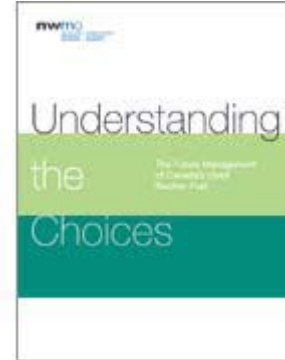
² *Nuclear Fuel Waste in Canada, Fact Sheet*.

³ See Nuclear Waste Management Organization Website at: <http://www.nwmo.ca/>

⁴ *Understanding the Choices*. NWMO, pg. 2.

NWMO set up a multi-phase consultation process to identify a preferred management approach. The first part of this process involved an examination of Canadian values and priorities in order to build a framework for understanding how nuclear fuel should be managed.

The second part of the process involved applying the framework to compare waste disposal management approaches. NWMO published a document entitled *Understanding the Choices*, which is currently being used in consultations with citizens and other stakeholders.



Consultations thus far have suggested that although there are differences of opinion about the choice of technical management methods, there is strong support for taking responsible action in a way that provides for adaptability and continuous learning, and ensures strong oversight and accountability.

NWMO is continuing its assessment of the management options. In early 2005, NWMO will issue a Draft Study Report to the public, in which it will report on the completed assessment and share draft recommendations.

On December 6, 2004 the Public Policy Forum held a roundtable with senior opinion leaders from the private and non-profit sectors who were asked to comment on potential elements of an implementation plan that would ensure that Canadians are comfortable and confident in the long-term solutions undertaken to manage nuclear fuel waste. The roundtable gave opinion leaders the opportunity to provide insight to NWMO on:

- € policy challenges and opportunities;
- € characteristics of a successful implementation policy; and
- € designing institutions for public confidence.

Prior to attending the roundtable, participants received the executive summary of *Understanding the Choices*. This executive summary is available at: <http://www.nwmo.ca/>.

Identifying the Policy Challenges and Opportunities

No government has the mandate to plan for thousands of years. They can only deal with simple probabilities.

The roundtable began with a presentation by Elizabeth Dowdeswell, President of NWMO, who described some of the policy challenges NWMO faces in developing options for managing nuclear fuel waste and in implementing those options. She said that nuclear waste management is an issue that polarizes people. She noted that NWMO must:

- € develop an engagement process that is meaningful and recognized by government, the private sector and citizens;
- € communicate to the public that all viable options are being considered and there is no bias toward deep geological disposal or any other method;
- € develop policy recommendations that could have an impact for over a thousand years;
- € develop policy recommendations on the management of nuclear fuel without engaging in a debate about the appropriateness of nuclear energy (because even if we stopped using nuclear power, Canadians would still have to decide what to do with existing nuclear fuel bundles); and
- € develop policy recommendations without engaging in site selection.

Following Ms. Dowdeswell's presentation participants identified several other challenges including:

- € *Regionalism* — Participants suggested that regionalism will likely become an important factor when attempting to implement a management approach. Participants warned that many western Canadians might not want to store nuclear fuel bundles, which for the most part originate in Ontario (the province where most nuclear fuel waste is generated).
- € *Rural/Urban Split* — It was noted that any solution would most likely have a disproportionate impact on rural residents, especially if centralized storage or deep-geological disposal is proposed. The location will likely be in a rural area, which could exacerbate rural/urban political tensions. Participants also pointed out that rural areas in Northern Ontario have, and will probably continue to have, large aboriginal populations, who have distinct perspectives and needs relating to environmental management.
- € *Transportation* — Canadians will need guarantees that nuclear materials are transported safely.

When the rubber hits the road all the previous consultation you [NWMO] did will not make the job any easier.

- € *"Not in my backyard"* — Some participants warned that regardless of how well the consultation process was undertaken, no solution would satisfy Canadians. Ultimately, no Canadian would want to host nuclear waste in their neighbourhoods. To overcome this, some participants suggested that financial incentives will need to be given to local communities.

- € *Political Dynamite* — This issue is so unpopular that some politicians might have to sacrifice their political careers in order for action to be taken in this area.

However, participants also identified several events that could affect the landscape in which the NWMO study is considered in the next decade, including:

€ *A growing sense of awareness and public attention on broader energy questions* — Participants felt public attention would grow for the following reasons: 1) Potential future energy shortages will give the problem a sense of urgency and bring energy policy to the forefront of public debate; 2) an inevitable end to Toronto's practice of sending its garbage to the United States which will force people to rethink their conservation and environmental practices, and 3) as baby boomers age, they will likely begin to question the impact of their practices on future generations.

This is a jurisdiction that is cold four months a year; the per capita consumption of energy going up. People sooner, rather than later will need to come up with solutions.

€ *Terrorism* — Some participants felt that a management strategy should consider the threat of a possible terrorist attack. However, other participants noted that nuclear fuel bundles are much less likely to be used by terrorists than other nuclear materials. A terrorist threat or incident could heighten and affect the public's concern for the long-term safety and management of used nuclear fuel. It was noted that the United States has focused on security concerns as a key driver for the long-term management of used nuclear fuel.

€ *Recession* — One participant felt that the United States was on the verge of a recession because of its high deficit and growing military obligations. A recession would have an impact on Canada as well and could make funding a long-term nuclear waste solution difficult.

€ *Parallel International Solutions* — Dealing with nuclear waste is an international challenge that other countries are also attempting to resolve. As other countries begin to identify solutions, it is possible that the solutions proposed by the NWMO could be reinforced and supported internationally.

Characteristics of Successful Implementation Policies

Participants identified several characteristics that are essential to ensure that an implementation strategy is acceptable to Canadians:

- € *Use an Incremental Approach* — Many participants emphasized that an incremental approach is more likely to be accepted by Canadians. Implementation will involve many layers of decisions and it is important to retain the flexibility to adjust course as appropriate. Participants advised against making more decisions now than are necessary. They felt that it is important not to make a decision before the right time, and that choosing a phased approach to a variety of options might be preferred rather than moving right into a final disposal site.

Adopting an incremental approach would also reassure citizens that policymakers are allowing technology to develop before making permanent solutions that might impact future generations. An incremental approach might be inevitable because it was pointed out that if centralized storage was recommended, it might take between 10 and 20 years to choose and prepare a site. Participants said NWMO

Incrementalism within reason is key – it should be considered a given

may wish to declare a policy of timing that moves from local to centralized management, and provide supervision between phases. Although the NWMO could recommend a course of action which would be immediately, participants suggested that NWMO not attempt to make all decisions, especially those required far into the future.

- € *Provide Incentives and Appropriate Risk Management to Communities* — Regardless of the choice made, there will likely be some form of site selection. The local community or communities will need to be engaged and given assurances that their community will benefit economically (through jobs or financial compensation) and that the risks to the community are minimal.
- € *Keep Wider Ethical Debates in Mind* — NWMO must make the best ethical recommendation. It should strive to reflect where the public's thinking is in order to sustain the course. A participant suggested that equity and fairness are key values for Canadians and that having procedural fairness will matter. NWMO should make a case for a recommendation in a way that is understandable to the public and which clearly relates to a carefully articulated problem. The NWMO should also be honest with the public by explaining that there are no risk-free solutions.

The rate of change of scientific development is accelerating and will continue to accelerate in the future. We don't know what new technology it will bring.

€ *Allow Technologies to Evolve* — Participants agreed that any strategy adopted must be flexible enough to accommodate new technologies that might make use of the energy in nuclear fuel bundles or make storing nuclear fuel safer or more efficient. It was also noted that policy makers cannot assume that the

current use of nuclear energy to generate power will continue, given that new technologies may be developed to replace it. It was emphasized that there is much we do not know about the future and it is important to consider the risks of taking too many decisions today that could foreclose opportunities for future generations.

€ *Separate the Debate about Waste Management from Power Generation* — When Canadians discuss the management of waste, they often begin to question the use of nuclear energy in power generation. Participants emphasized that although these issues are related, they are also distinct because Canada has already produced nuclear waste that needs to be managed, regardless of whether we choose to continue to use nuclear power. Focusing the discussion this way would help Canadians to focus their concerns and energies on a realistic solution. However, many participants felt that a debate about energy generation should take place in advance of or concurrently with the debate on a management approach. Some participants felt it will be difficult for the NWMO study to avoid the larger public discussion around energy choices. One participant referenced the vast changes in Canada's energy mix in the last 100 years, underscoring that we cannot assume to know the future energy landscape. The debate over the use of nuclear energy would certainly be required if Canadians become concerned that the solution proposed will not adequately deal with nuclear waste generated in the future.

In the end, somehow or other, you will need to do something around the debate about power options, because that is part of the story.

€ *Use Language that Encourages Individual Accountability as Canadians* — Participants recommended that NWMO use language like “What should *our* government do?” This type of language shapes the debate as a national one, and focuses on Canadians' common interests and responsibilities.

€ *Communicate Expert Advice Effectively* — Some participants noted that there is potential for conflict between expert advice and citizen preference. What if experts and citizens do not agree on the solution? Some participants suggested that emphasis needs to be placed on communicating expert advice to citizens. NWMO must make a straightforward case for its recommendation. Its report should be clear and concise.

Designing Institutions for Public Confidence

Participants were invited to suggest approaches to governance and oversight to support implementation of a long-term management approach. These approaches had the following characteristics:

- € *Democratic and Transparent* — Institutions must be designed to reflect and remain in tune with public opinion. They must continuously engage and be accessible to citizens. One participant suggested a public liaison committee to communicate with citizens at the local level. Accountability through reporting will be key for the NWMO. The community needs to see if an organization is living up to its agreement. NWMO must report clearly on the risks, performance and results of monitoring the facility. The community and multi-stakeholder groups can be invited to identify the metrics to be measured and reported by NWMO. The community has a right to be involved in aspects of decision-making, so that they can take ownership and direct/advise governments.
- € *Local Involvement* — Community trust and involvement is key. Communities at the site (or sites) should be involved in the management and oversight of nuclear waste facilities. Participants suggested models of local involvement developed by the mining industry be explored further by the NWMO. One participant noted that organizations which are most trusted are those that are adept at working close to the community. At the local level, the public should be invited to see the management of nuclear fuel as a collective issue requiring a collective solution.
- € *Independent Third Party Structure to Ensure Accountability* — Participants suggested that regulatory oversight and third-party audits are essential at both the local and national levels. For example, one participant suggested that a board of experts appointed like Supreme Court judges (recommended by authorities and for whom the government accepts responsibility) should be created. This would make government responsible for both the issue and the people they appoint. Participants also recommended that NWMO build on the Responsible Care model developed by the International Council of Chemical Associations.
- € *Expert-run and managed facilities* — Governments should ensure that local facilities are expertly run and managed. As mentioned, these expert-run facilities would be held accountable by independent oversight bodies.
- € *Adaptive Management* — Facilities would have to be managed with flexibility over the long-term so that new technologies and new approaches can be incorporated.
- € *Ensure Mechanisms are in Place to Deal with Accidents* — Citizens need assurance that whatever implementation strategy is adopted, the government will be able to respond to accidents or threats to nuclear waste in their area.

ANNEX 1 – AGENDA

Implementing a strategy for the long-term management of nuclear fuel

Royal York Hotel
Mezzanine Floor – The Library Room
100 Front St. W, Toronto

December 6, 2004 – 5:30 p.m. to 9:00 p.m.

5:30 p.m. Registration and Reception

6:00 p.m. Chair’s Welcome

Jodi White, President of Public Policy Forum

6:10 p.m. Tour de Table

(participants introduce themselves)

6:30 p.m. “Defining the issue”

What we are learning about citizens’ values and expectations around oversight and governance and the challenges involved.

Elizabeth Dowdeswell, President, NWMO

6:50 p.m. Priorities and Expectations Over Time

From the outset, the NWMO recognized the need to be driven, in its study, by the values of Canadians. An important focus for the NWMO is understanding the priorities and expectations that Canadians hold for this study of management options.

For Discussion:

What are values and expectations that should be considered in choosing a management approach?

Will any of these values and expectations change over time?

What social and ethical considerations will be important to address in choosing a management approach, and in the development of implementation plans?

Sean Conway will be invited to begin this discussion with a 3-5 minute comment.

General discussion

7:45 p.m. Designing Institutions for Public Confidence

The NWMO has heard from citizens and experts alike that *how* any management approach is implemented will be as important as *which* technical method is selected. In proposing implementation plans, NWMO has an opportunity to be responsive to the values and priorities of citizens, including their desire to see accountability and transparency; more information; sound stewardship, adaptability, responsibility, ongoing citizen engagement; and institutions and oversight that will support public confidence.

For Discussion:

How can good governance and corporate social responsibility help NWMO address citizens' expectations for transparency and accountability?

How are other businesses and sectors responding to rising demands for accountability and transparency?

Are there models of best practice that the NWMO should look to in terms of ongoing citizen engagement?

What lessons on risk communication might the NWMO learn from, as it proposes ways to enhance information, communication and openness around nuclear waste management?

How can the NWMO effectively design implementation plans to be effective for many years to come?

Alan Blakeney will be invited to begin this discussion with a 3-5 minute comment.

General discussion

8:50 p.m. Closing Remarks

Liz Dowdeswell, President, NWMO

Jodi White, President, Public Policy Forum

9:00 p.m. Adjourn

ANNEX 2- PARTICIPANT LIST

Participants

The Honourable Allan E. Blakeney
Visiting Scholar
University of Saskatchewan

Dr. Cal Bricker PhD
Vice President, Public Affairs
Waste Management of Canada
Corporation

Mr. Sean Conway
Policy Advisor
Gowling Lafleur Henderson LLP

Ms. Elizabeth Dowdeswell
President
Nuclear Waste Management
Organization

Mr. Rudyard Griffiths
Executive Director
The Dominion Institute

Mr. David Lindsay
President
Association of Colleges of Applied Arts
and Technology of Ontario

Ms. Sandra Lopes
Research Associate
Public Policy Forum

Mr. Bruce Mau
Chairman
Bruce Mau Design Inc

The Honourable Barbara J. McDougall
Advisor
Aird & Berlis LLP

Mr. Gordon R. Peeling
President and Chief Executive Officer
Mining Association of Canada

Mr. Yves Poisson
Director of Special Projects
Public Policy Forum

Ms. Kathryn Shaver
Nuclear Waste Management
Organization

Dr. Ken Smith
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Secor Conseil

Dr. Stuart Smith
Chairman
Ensyn Technologies Inc

Ms. Georgina Steinsky Schwartz
President and Chief Executive Officer
Canadian Centre for Philanthropy

Mr. Harry Swain
President
Trimbelle Limited

Ms. Jodi White
President
Public Policy Forum