nwmo

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

August 2005

Dialogue Report

Dialogue on *Choosing a Way Forward* The NWMO Draft Study Report Trois-Rivières, QC - July 8-9, 2005

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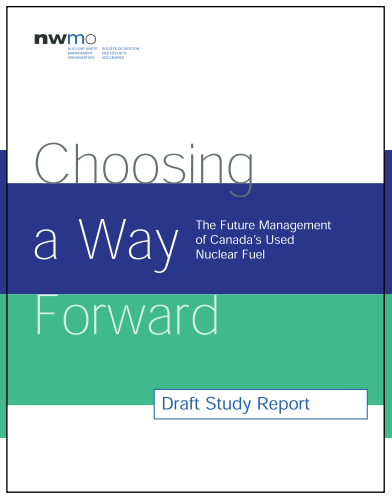


NWMO Background Papers

NWMO has commissioned a series of background papers which present concepts and contextual information about the state of our knowledge on important topics related to the management of radioactive waste. The intent of these background papers is to provide input to defining possible approaches for the long-term management of used nuclear fuel and to contribute to an informed dialogue with the public and other stakeholders. The papers currently available are posted on NWMO's web site. Additional papers may be commissioned.

The topics of the background papers can be classified under the following broad headings:

1. **Guiding Concepts** – describe key concepts which can help guide an informed dialogue with the public and other stakeholders on the topic of radioactive waste management. They include perspectives on risk, security, the precautionary approach, adaptive management, traditional knowledge and sustainable development.

2. **Social and Ethical Dimensions** - provide perspectives on the social and ethical dimensions of radioactive waste management. They include background papers prepared for roundtable discussions.

3. **Health and Safety** – provide information on the status of relevant research, technologies, standards and procedures to reduce radiation and security risk associated with radioactive waste management.

4. **Science and Environment** – provide information on the current status of relevant research on ecosystem processes and environmental management issues. They include descriptions of the current efforts, as well as the status of research into our understanding of the biosphere and geosphere.

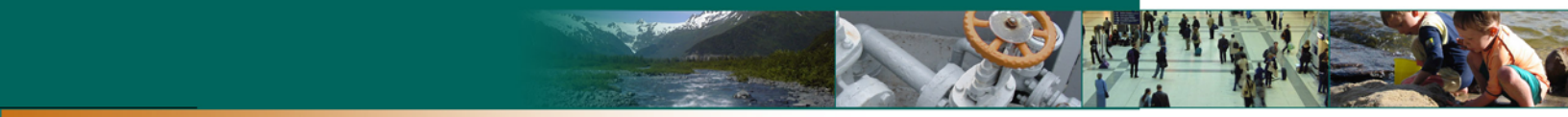
5. **Economic Factors** - provide insight into the economic factors and financial requirements for the long-term management of used nuclear fuel.

6. **Technical Methods** - provide general descriptions of the three methods for the longterm management of used nuclear fuel as defined in the NFWA, as well as other possible methods and related system requirements.

7. **Institutions and Governance** - outline the current relevant legal, administrative and institutional requirements that may be applicable to the long-term management of spent nuclear fuel in Canada, including legislation, regulations, guidelines, protocols, directives, policies and procedures of various jurisdictions.

8. **Workshop Reports** - provide information on the outputs and outcomes of some NWMO engagement activities including discussions and expert workshops.

9. **Assessments** - provides perspectives on the advantages and limitations of the management approaches under study.



Dialogue on *Choosing A Way Forward*

The NWMO Draft Study Report

Trois-Rivières, Québec, July 8-9, 2005

DIALOGUE REPORT

August 8, 2005

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DIALOGUE ON

CHOOSING A WAY FORWARD
THE NWMO DRAFT STUDY REPORT

– DIALOGUE REPORT –

Trois-Rivières, Québec
July 8 and 9, 2005

Submitted to:

Nuclear Waste Management Organization

August 8, 2005

Prepared by:

Stratos Inc.
1404-1 Nicholas Street
Ottawa, Ontario
K1N 7B7
tel: 613 241 1001
fax: 613 241 4758
www.stratos-sts.com

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strategies to sustainability

OUR VISION

A world where decision makers at all levels integrate sustainability into their actions to improve ecological and human well-being.

OUR MISSION

To provide business, governments and organizations with expert advice, information, and tools that will assist the development and implementation of more sustainable policies and practices.

1 Introduction

1.1 Session Objectives

The Nuclear Waste Management Organization (NWMO) hosted the fourth of six dialogue sessions on its *Draft Study Report: Choosing a Way Forward - The Future Management of Canada's Used Nuclear Fuel* in Trois-Rivières, Québec, on July 8-9 2005.

Participants to the dialogue sessions were invited on the basis of their prior involvement during the NWMO study process, including the compilation of background information, as well as workshops, roundtables, contributors to technical studies, and dialogue and engagement activities on a broad range of issues undertaken by NWMO since November 2002. A total of 19 participants attended the sessions. Appendix I provides a listing of the NWMO research and engagement activities from which the Dialogue Session participants were identified.

The purpose of the dialogue session was to provide:

- an opportunity for participants to comment on the draft NWMO recommendation and *Draft Study Report*;
- a forum for an exchange of views; and
- the NWMO with the opportunity to improve the recommendation before it is finalized.

This report is a summary of the main views expressed at the dialogue session. The meeting was not intended to reach consensus among participants, though the report notes areas of general agreement.

1.2 Session Opening

Elizabeth Dowdeswell, President of the NWMO, gave participants an overview of the NWMO's work and the main elements of the draft recommendation described in detail in its *Draft Study Report.* She emphasized that how the management system for used fuel is implemented is as important as the technical choice to be made..

Ms. Dowdeswell informed participants that all inputs to the *Draft Study Report*, including reports on previous dialogue and engagement sessions, are available on the NWMO website (www.nwmo.ca). Finally, she reminded participants that the NWMO is required to submit its final recommendation to the Minister of Natural Resources Canada by November 15, 2005.

2 Participants' Views on the Recommended Approach

2.1 Requests for Clarification

Participants raised a number of questions with respect to the *Draft Study Report* and the draft recommendation, including requests for clarification concerning:

- the expected duration of the used fuel transportation phase;

- the cost of implementing the recommendation, the reliability of cost estimates and the assurance that the needed funds would be there to build the deep geological repository;
- why some provinces (e.g., New Brunswick) were included as potential regions of the country to focus the siting for deep geological storage and others provinces were not (e.g., Manitoba);
- why the NWMO was proposing that other geological formations (i.e., Ordovician sedimentary rock) were suitable for the deep geological repository;
- what the scope of research and development activities would be;
- whether the NWMO was considering multiple centralized sites or just one;
- how the Dialogue with the Aboriginal organisations was integrated with this dialogue;
- whether Canada would have to import spent nuclear fuel from either the US because of NAFTA obligations, or other countries that have purchased Canadian uranium or CANDU reactors;
- the physical dimensions of the proposed deep geological repository;
- what work the NWMO had done so far on siting this repository;
- what research has been done to reduce the radioactivity of nuclear waste; how will the possibility of retrievability affect research in the future and the potential of reprocessing the used fuel?;
- whether, failing the identification of a suitable site, a possible outcome of Phase 1 might be further public consultations on site selection;
- how other countries are approaching the issue of spent fuel management, including site selection, continuous monitoring and retrievability;
- how long it may take the government to make a decision on the NWMO's recommendation and whether this decision would be public.

Elizabeth Dowdeswell and Sean Russell of the NWMO responded to these questions and indicated where further information is contained in the *Draft Study Report*.

2.2 General Views on the *Draft Study Report*

Several participants congratulated the NWMO on the transparency of its dialogue process and the clarity of the analysis leading to its recommendation. They thanked the NWMO for increasing public awareness about nuclear wastes.

Several participants also argued strongly that one cannot dissociate the issue of nuclear waste from the future of nuclear power itself. They would prefer to see the NWMO promoting a dialogue on the costs and benefits of various energy options that would place the management of nuclear waste in a broader context. More specifically, these participants argued that the NWMO could not define the scale of the problem it was trying to address without knowing how much waste would be produced in the future. In this light, they argued that utilities should not be licensed to refurbish aging reactors before a permanent solution to the storage of spent fuel had been found. They concluded that the long-term solution to nuclear waste is to cut pollution at the source by stopping producing nuclear energy. They asked the NWMO to take a position on the future of nuclear energy (even though they recognized it was not in the NWMO's mandate) and to request a stronger government commitment against the reprocessing of spent nuclear fuel (e.g., through an Act of Parliament rather than simply as a matter of policy, as is currently the case).

A few of these participants did not see a material difference between the Study's draft recommendation and Option 1 (Deep Geological Disposal in the Canadian Shield). They

do not think that the safety of this option (Option 4: Adaptive Phased Management) has yet been scientifically proven. They believe that the nuclear industry has been committed all along to deep geological storage and that the NWMO is now doing little more than a public relations campaign for the concept.

One participant cautioned the NWMO against unwittingly misleading the reader by inappropriately using re-assuring words in its report. These words include "disposal" [1] (in a finite environment, humanity cannot ultimately dispose of anything permanently); "retrievability (gives the impression that any problem can be fixed easily); and "decommissioning" (while individual reactors may be decommissioned, the deep geologic repository will be "commissioned").

Several participants also argued that the utilities producing nuclear energy should be more actively involved in raising community awareness regarding nuclear energy and nuclear wastes.

2.3 Views on the Appropriateness and Key Characteristics of the Recommendation

Participants expressed mixed views about the appropriateness of the NWMO's draft recommendation. Some argued that it was too narrow because it did not address the future of nuclear energy. Most participants, even those who supported the draft recommendation overall, had misgivings about the proposed implementation timeframe, which they believed was too long. Participants, though, agreed with the overarching principles of Safety and Fairness to this and future generations.

Centralized containment and isolation

There were mixed views on this aspect of the recommendation. While there was comfort with using the Canadian Shield to store spent fuel, one participant asked the NWMO to explain more clearly why it was proposing just one deep geological repository rather than several. While participants recognized the importance of security in making a siting decision, they were divided on whether security considerations favoured the development of one or more sites. Some participants argued that spent fuel should remain at the reactor sites until the safety of the deep geological repository has been proven.

One participant argued in favour of limiting by law the size of the deep geological repository in order to preclude the future expansion of the nuclear industry.

Phased decision-making

While participants supported phased decision-making in principle, many argued strongly in favour of accelerating the notional implementation timetable presented in the *Draft Study Report*. They believe that the current generation has a responsibility to develop a solution to the spent fuel problem and that we should start excavating a deep repository soon (e.g., within ten to fifteen years). Furthermore, they were concerned that the proposed implementation schedule would:

- not incite politicians to take quick action;
- prolong the security risks at existing reactor sites posed by the temporary storage of highly-radioactive wastes; and

[1] The NWMO does not use the word "disposal" to describe its draft recommendation, Adaptive Phased Management which is based on centralized containment and isolation of used fuel in a deep geologic repository in a suitable rock formation.

- increase the possibility of cost overrun in the construction of the final repository.

Some participants also feared that an extended timetable would allow the nuclear industry to continue to grow.

Interim shallow storage
Many participants did not see the need for interim shallow storage at the central site. Some believed that this option could be made redundant if waste producers used a "just-in–time" approach to the delivery of the nuclear waste. Some were concerned that interim shallow storage could become a permanent rather than a temporary step. Others, however, believed that this option offered the advantages of allowing time for additional research to be conducted and of reducing security risks by centralizing the wastes earlier than might be possible otherwise. Some argued that, if security was a concern, electricity producers could keep their used nuclear fuel in shallow underground storage at the reactor sites.

Continuous monitoring
Participants agreed on the importance of continuous monitoring and argued that the NWMO should set aside a budget to conduct research on long term monitoring and remote sensing technologies. They noted that continuous monitoring was more likely to occur if public awareness of nuclear waste issues were increased. Some were concerned about ensuring that monitoring would continue for the life of the facility.

Retrievability
There was general support for this aspect of the recommendation on two grounds:

- It allows for technical and scientific progress which may find future uses for the spent fuel;
- It makes it easier to correct deficiencies that may emerge over time in the deep geological repository site.

2.4 Opportunities for Improving the Draft Study Report and Recommendation

Many participant recommended that the NWMO identify a series of shorter steps for implementing its recommendation that would be more closely related to the four-year electoral cycle. They believe such a timetable would be more likely to force elected officials to take timely decisions on nuclear waste management than the current timetable.

3 Participant Views on the Conditions Required to Implement the Approach Successfully

Participants offered their views on the following five key implementation issues identified in the draft study report:

- Siting;
- Governance;
- Citizen engagement
- Financing surety; and
- Research and intellectual capability.

3.1 Participant Views on Siting

Participants proposed a number of guidelines for site selection related to both process and siting.

Process:

- The site-selection process should start as soon as possible.
- Canadians need to have a high level of confidence in the site selection process. This implies a high degree of transparency and public engagement.
- The NWMO will need to identify a range of potential sites in order to ensure a fair selection process. Unencumbered Crown land should be considered first.
- The NWMO will have to empower potential host communities to make informed decisions on siting (i.e., by building up their capacity to consider the pros and cons).
- Local inhabitants would have to demonstrate their willingness to become a host community through a substantial majority (e.g., in the order of 80%).
- Communities along the transportation corridor would also have to agree to the transit of the nuclear waste through their jurisdiction.
- The affected provinces would need to agree to the storage and transportation choices.

Siting - Factors to take into account in siting a waste facility should include:

- Isolation
- Energy supply to the facility
- Biological and environmental safety
- Accessibility by water
- Capacity for military intervention for security (e.g., near a military base)
- Proximity to the majority of reactor sites
- Transportation security

3.2 Participant Views on Governance

Most dialogue participants expressed concerns about the current composition of the NWMO Board of Directors and would like the NWMO to be more independent of the utilities. They argued that a more independent Board would give the NWMO greater public legitimacy and remove a potential conflict of interest (i.e., utilities may have an interest in understating the technical and financial risks in spent fuel storage so as to continue generating nuclear energy).

According to them, the composition of the Board should primarily support the various functions it will need to discharge (e.g., R&D, public awareness) rather than represent specific groupings (e.g., utilities). This said, participants saw value in creating a more diverse Board that might include academics as well as manufacturers, among others. Many participants believed that the majority of Board members should come from outside the utilities.

Some participants went further and argued that the NWMO Board should be at arm's length from both the nuclear industry and government and should act as the country's conscience in ensuring that the NWMO operations are scientifically, socially and ethically acceptable. According to these participants, the NWMO would only succeed in implementing a flexible adaptive management if it were independent from the waste producers.

There was little discussion about the Advisory Council. Participants believed that the Advisory Council should be independent, have its own resources and include credible individuals.

In a different vein, some participants argued that once it becomes an implementation agency, the NWMO should oversee private contractors who would carry out the various waste storage activities rather than undertake all of these itself.

3.3 Participant Views on Citizen Engagement

Participants agreed to the importance of raising public awareness of nuclear power in general and waste fuel management in particular so that Canadians can engage in an informed discussion of these issues. They believed that an awareness-raising campaign should be national in scope and be part of a broader debate over energy policy. Participants recognised that engaging the public on these issues will not be easy. There is a great deal of public apathy and most Canadians are understandably pre-occupied by more immediate matters.

Participants saw a role both for the school system in reaching out to young people by incorporating these issues in school curricula and for public figures in raising them in front of various audiences. They encouraged the NWMO to think creatively about outreach opportunities and consider non-traditional communications vehicles. The messages to be conveyed should not only be technical (e.g., costs, engineering options) but also ethical (e.g., responsibility towards future generations). They also emphasized that, in order to be effective, such an awareness campaign would need to be supported by an explicit strategy, an action plan with clear deliverables and an adequate budget.

3.4 Participant Views on Financing

Several participants were concerned that the nuclear industry in the past has suffered large cost overruns and they were sceptical as a result of the cost estimates the NWMO presented in its report. They would like to see a comparative accounting of the cost of producing electricity from different sources (e.g., nuclear, hydro, wind, gas) to inform public debate on energy choices and shed light on the full lifecycle costs of each of these options. In the same vein of transparency, they argued in favour of showing the cost of nuclear waste storage as a separate line item on the consumer's electricity bill.

Some participants also expressed concerns about the financial surety provisions outlined in the *Draft Study Report*. Given recent financial scandals affecting several large companies, they would like to see stronger provisions to ensure that sufficient funds will be available when needed and to avoid the risk of future governments having to levy a special tax to fund nuclear waste management activities.

Some participants also sought greater clarity on the proposed allocation of the implementation budget: what activities, beside those related to storage, for example, would be funded?

One participant reminded the group that the financial capacity of individual Canadians is limited and should not be taken for granted in costing scenarios.

3.5 Participant Views on Research and Intellectual Capability

Participants argued that NWMO should make R&D an explicit priority with a supporting action plan with targets and a financing strategy. Research should not be limited to siting and storage issues but should also include developing practical uses for nuclear waste as well as the development of monitoring tools.

Some participants noted that Canada has many nuclear researchers and physicists who have been involved in reactor design and who could now be retrained to address waste management issues.

One participant also suggested that the NWMO consider funding a university chair on nuclear waste management to address non-technical issues such as inter-generational equity.

4 Conclusion and Next Steps

Elizabeth Dowdeswell thanked the participants on behalf of the NWMO. Ms Dowdeswell then outlined the balance of the engagement process with respect to the *Draft Study Report*. Participants were encouraged to read the report in detail as many of the concerns raised during the dialogue session are addressed in greater detail there. Finally, Ms Dowdeswell encouraged participants to make further submissions to the NWMO via letter, or through the NWMO website at www.nwmo.ca before August 31, 2005. More information on submitting written comments can be found there.

Appendix I: Dialogue Session Invitations

Participants to the dialogue sessions were invited from the provinces involved in the nuclear cycle - Ontario, Québec, New Brunswick, Manitoba and Saskatchewan. Participants were identified on the basis of their prior involvement with NWMO including engagement and dialogue activities, research activities, and those that expressed an ongoing interest in the work of the NWMO.

In total, Dialogue Session invitees were identified on the basis of their participation in the following NWMO activities:

- Individuals who have made submissions to the NWMO;
- Authors of Background Papers;
- Aboriginal dialogue leaders;
- Traditional Knowledge Workshop;
- Mayors/Municipal leaders and staff of the Canadian Association of Host Communities;
- Ethics Roundtable;
- People from Public Information & Discussion sessions who asked that the NWMO keep them informed; and
- Organizers and participants of key NWMO events:
    - Scenarios Workshops,
    - Technical workshops
    - Public Policy Forum;
    - Community Dialogue Workshops;
    - CPRN Dialogues (those that asked NWMO to keep them informed);
    - National Stakeholders and Regional Dialogues;
    - Nature of the Hazard Workshop.