

**nwmo**

NUCLEAR WASTE SOCIÉTÉ DE GESTION  
MANAGEMENT DES DÉCHETS  
ORGANIZATION NUCLÉAIRES

ANNUAL REPORT 2003

# Dialogue

**From Dialogue to Decision:**  
MANAGING CANADA'S NUCLEAR FUEL WASTE

# to Decision

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NUCLEAR WASTE  
MANAGEMENT  
ORGANIZATION

SOCIÉTÉ DE GESTION  
DES DÉCHETS  
NUCLÉAIRES

The Honourable R. John Efford, P.C., M.P.  
Minister, Natural Resources Canada  
Ottawa, Ontario

March, 2004

Dear Minister,

We are pleased to submit to you the second annual report of the Nuclear Waste Management Organization (NWMO).

Fiscal year 2003 marks the first full year of operation for the NWMO.

We submit this report in compliance with sections 16 (1) and 23 (1) of the *Nuclear Fuel Waste Act*.

In fulfillment of our obligations under section 24 of the *Act*, we are also making this report available to the public.

Respectfully submitted,

Richard Dicerni  
Chairman

Elizabeth Dowdeswell  
President

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# From Dialogue to Decision:

MANAGING CANADA'S NUCLEAR FUEL WASTE

## CONTENTS

PAGE . 4	VISION, MISSION AND VALUES
PAGE . 6	CHAIRMAN'S MESSAGE
PAGE . 8	NWMO MANDATE
PAGE . 10	PRESIDENT'S REPORT
PAGE . 12	THE STUDY - A PROCESS OF ENGAGEMENT Expanding Our Dialogue Broadening Our Communications Inviting Comment from Canadians – Discussion Document 1 Seeking the Views of Canadians A Year in Review – What We Heard
PAGE . 20	BUILDING A FRAMEWORK FOR OUR ASSESSMENT Reporting On Our Research and Analysis Laying the Groundwork For Our Assessment
PAGE . 27	LOOKING AHEAD Engaging Canadians Assessing The Management Approaches
PAGE . 31	THE ADVISORY COUNCIL Operations 2003 Activities
PAGE . 34	THE TRUST FUNDS
PAGE . 35	THE CORPORATE PROFILE The Corporation The Board Of Directors The Advisory Council
PAGE . 41	FINANCIAL STATEMENTS

# From Dialogue to Decision:

MANAGING CANADA'S  
NUCLEAR FUEL WASTE

VISION, MISSION AND VALUES

## VISION:

What are NWMO's hopes for the future?

## MISSION:

What is the purpose of NWMO?

## VALUES:

What guides NWMO's work?

## VISION, MISSION AND VALUES

### VISION

Our vision is the long-term management of Canada's nuclear waste in a manner that safeguards people and respects the environment, now and in the future.

### MISSION

The purpose of the NWMO is to develop collaboratively with Canadians a management approach for the long-term care of Canada's used nuclear fuel that is socially acceptable, technically sound, environmentally responsible and economically feasible.

### VALUES

The fundamental beliefs that will guide us in our work include:

#### INTEGRITY

We will conduct ourselves with openness, honesty and respect for all persons and organizations with whom we deal.

#### EXCELLENCE

We will pursue the best knowledge, understanding and innovative thinking in our analysis, engagement processes and decision-making.

#### ENGAGEMENT

We will seek the participation of all communities of interest and be responsive to a diversity of views and perspectives. We will communicate and consult actively, promoting thoughtful reflection and facilitating a constructive dialogue.

#### ACCOUNTABILITY

We will be fully responsible for the wise, prudent and efficient management of resources and be accountable for all of our actions.

## CHAIRMAN'S MESSAGE

The Nuclear Waste Management Organization (NWMO) is pleased to submit its second annual report to the Minister of Natural Resources Canada.

We are reporting on the NWMO's first full year of operation.

2003 saw the development of study and engagement plans to support the NWMO's assessment of long-term management approaches for Canada's used nuclear fuel. The architecture of these plans drew from the feedback that the organization received in its early meetings, including the thoughtful advice provided by the independent Advisory Council to the NWMO.

The President has initiated a public dialogue which has expanded well beyond industry circles. In addressing the long-term management of used nuclear fuel, the NWMO study promises to take an intense and thorough look at environmental integrity and social, ethical and socio-economic considerations, alongside important aspects of technical feasibility and financial sustainability. The Board is committed to ensuring that all feasible options for the long-term management of used nuclear fuel are thoroughly examined and the best possible approach recommended to Government.

The NWMO's first discussion document was published in November 2003. We anticipate that this document will help to stimulate and focus public discussion on the key issues and questions to be asked as the NWMO continues its analysis of approaches for the long-term management of Canada's used nuclear fuel.

In this report, there are also updates from the Advisory Council and on the trust funds established by Canada's nuclear energy corporations. The independent comments and advice from the Council and the financial provisions made by industry represent important contributions toward fulfillment of the requirements of the *Nuclear Fuel Waste Act*.

# Chairman's

## CHAIRMAN'S MESSAGE

Looking ahead, 2004 marks an important year in our legislated mandate as the NWMO proceeds with a comparative assessment of different management approaches. This assessment will bring together the best and most advanced expertise and understanding on these issues internationally, and the values closely held and expressed by the Canadian public.

The NWMO study presents an opportunity for citizens and experts to help shape recommendations to the Government of Canada on future management approaches for Canada's used nuclear fuel. Further opportunities for public engagement will be provided as part of the environmental assessment and licensing processes of regulatory authorities, after the Government decides on a management approach.

On behalf of the Board, I encourage every interested Canadian to visit the NWMO website and become involved by sharing your comments with the organization.

**Richard Dicerni**  
Chairman

# Message

## NWMO MANDATE

### About the NWMO

In Canada, used nuclear fuel is safely managed by its owners in wet or dry storage facilities at reactor sites, meeting or exceeding regulatory requirements of the Canadian Nuclear Safety Commission. These current storage practices at the reactor sites are intended to be interim solutions. Like many other countries, Canada is now on a path to carefully consider a long-term management approach for used nuclear fuel.

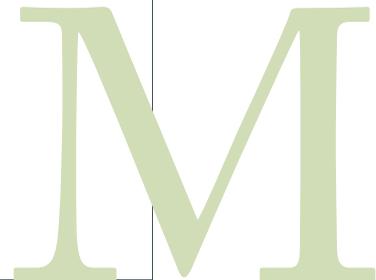
In November 2002, the Government of Canada brought into force the *Nuclear Fuel Waste Act*, which is a legal framework that enables the Government of Canada to make a decision on the long-term management of nuclear fuel waste based on a comprehensive, integrated and economically sound approach for Canada.

- This legislation requires major owners of nuclear fuel waste – Ontario Power Generation Inc., New Brunswick Power Corporation and Hydro-Québec – to establish the NWMO.
- The legislation requires the NWMO to appoint an Advisory Council to provide independent comment on the NWMO study and management approaches.

Still in the early part of its work, the NWMO is to consult and investigate approaches for managing Canada's used nuclear fuel, recommend an approach, and report to the Government of Canada.

The Government of Canada will choose the management approach. The NWMO will then implement the approach decided upon by Government.

Opportunities for public engagement will continue through the environmental assessment and licensing processes of regulatory authorities.



## NWMO MANDATE

### About Our Study

The NWMO must submit to the Minister of Natural Resources Canada a study which sets out:

- Proposed approaches for managing used nuclear fuel, along with the comments of the Advisory Council and the public on those approaches; and
- A recommendation from the NWMO to the Minister as to which management approach should be adopted.

The study must assess the management approaches from a variety of dimensions – ethical, social and economic, as well as technical.

The NWMO must propose economic regions for implementation of each approach – but we are not to proceed with specific site selection.

The NWMO must consult the general public, and in particular aboriginal peoples, on each proposed approach.

Under the Act, the NWMO must study the following technical methods, at a minimum:

- Deep geological disposal in the Canadian Shield;
- Storage at nuclear reactor sites; and
- Centralized storage, either above or below ground.

The NWMO may study other methods as well.

The *Nuclear Fuel Waste Act* provides the NWMO with a three-year period in which to complete its study and public consultations. Specifically, the NWMO must submit its study to the Minister of Natural Resources Canada by November 15, 2005. The study will be made available to the public at the same time.

You can read more about the *Nuclear Fuel Waste Act* and the NWMO's legislated mandate on our website, at [www.nwmo.ca](http://www.nwmo.ca).

# mandate



## PRESIDENT'S REPORT

Our journey from dialogue to decision is well underway. This performance report for our first full year of operation documents the initial steps we have taken to meet our mandate of investigating and developing an approach to the long-term management of Canada's used nuclear fuel.

We are encouraged by the willingness of many Canadians to contribute. We remain committed to providing opportunities for their active involvement.

We understand that our recommendations must strive to be environmentally responsible, socially and ethically acceptable, technically sound and economically feasible. They should accurately reflect the values of Canadians. Early in 2003, after listening to a cross-section of individuals, organizations and communities of interest we developed an ambitious study and engagement plan which reaches out to citizens including those in aboriginal communities, those close to reactor sites and those in government, academia, and industry.

The publication of our first discussion document was an important milestone. "Asking the Right Questions? The Future Management of Canada's Used Nuclear Fuel" describes our mandate and the nature of the challenge. It also poses key questions that will help guide the next steps of our work.

We are grateful to those who participated in our early engagement activities. All brought perspectives and ideas that were instrumental in advancing our knowledge and understanding. We listened and learned.

Ours is a work in progress. We are now engaging Canadians about the contents of the discussion document. We want to test our initial observations and refine our thinking. This iterative process of seeking input and exposing our evolving ideas will continue until our task is completed.

In understanding the context for our study, we looked back to benefit from the experience and findings of the Seaborn Panel. We met with former Panel members and invited those who participated to follow and be involved in our process.

We also looked to the future, recognizing the enormous time frames that must be considered for the long-term management of nuclear waste. Through a series of scenario workshops, we brought together a group of Canadians from various walks of life, to help us imagine and begin to understand possible societal futures. They took on the daunting task of looking ahead thousands of years, speculating about the magnitude of the nuclear waste challenge and its impact on social, political and environmental well-being.

## PRESIDENT'S REPORT

We have benefited from a wealth of technical and scientific expertise nationally and internationally. Workshops and meetings were held with environmental interests, ethicists and representatives of aboriginal communities. Papers were commissioned to capture the current state of knowledge on a broad range of technical matters as well as evolving concepts related to our work. We met with leading research groups in the nuclear field, industry leaders, national and international oversight organizations, and federal and provincial parliamentarians whose responsibilities intersect with our work. Important insights were gained from an exchange of information about lessons learned in other countries. We shared research findings and perspectives about the challenges associated with meeting societies' expectations.

Within Canada and internationally, the landscape against which our study is being conducted is shifting. Issues of energy policy, security, health and safety, environmental protection, and good governance surface on the public agenda. While the world around us continues to change, our task remains that of providing our best advice to the Government of Canada about a comprehensive, integrated and robust approach to the safe management of our used nuclear fuel, whatever future unfolds.

I am indebted to the Honourable David Crombie and members of the NWMO Advisory Council who are a constant source of guidance.

Our plans for 2004 are formidable. Nevertheless, I am confident that our goals will be achieved on time, within budget and with the utmost care. While we are focused on results, we continue to be conscious of finding ways to enable Canadians from all walks of life to be involved in shaping an outcome that will deal effectively with a legacy of waste for generations of Canadians yet to come.

**Elizabeth Dowdeswell**  
President

# 2003

## THE STUDY – A PROCESS OF ENGAGEMENT

2003 was a very productive year for the NWMO.

An extensive program of engagement is at the heart of our study. In 2003 we designed initiatives to involve the general public, nuclear site communities, aboriginal communities, and individuals who bring to the study their experience and expertise in areas of social, economic, scientific and technical disciplines.

Major steps in implementing our plans were carried out in 2003 and are continuing in 2004.

### Expanding Our Dialogue

The *Nuclear Fuel Waste Act* identifies consultation with the general public, including aboriginal peoples, as an important element of the NWMO's mandate. To meet this obligation, and to further enhance our understanding, the NWMO has committed to "develop collaboratively with Canadians a management approach for the long-term care of used nuclear fuel that is socially acceptable, technically sound, environmentally responsible and economically feasible."

In 2003, we developed a plan to allow us to explore the values, concerns and expectations of Canadians at each step along the way in our study. We were pleased to review our proposed study plan with the Advisory Council. The plan reflects the Council's advice that we publish on our website a plan that presents a road map through to 2005, identifying key milestones and opportunity for public comment. Noting the short time period within which the NWMO study must be completed, the Advisory Council encouraged the NWMO to structure the release of our discussion documents on a timeline that would maximize opportunity for public discussion and comment, and to actively initiate engagement on the papers.

We organized a large number of informal meetings as part of our early conversations with Canadians. In the first half of 2003 we held over 250 face-to-face conversations with individuals and representatives of various organizations at local, provincial, national and international levels. Included were representatives of aboriginal groups, nuclear power plant workers, youth, residents and elected officials of nuclear

power plant communities, environmental organizations, industry experts, faith communities, government agencies and parliamentarians. These conversations provided insight and guidance for the development of our study plan. They also contributed to the initial work underlying an analytical framework for the assessment of management approaches.

In addition to inviting comments from the public at large, we held several structured activities with a wide range of individuals and organizations. We organized roundtables and workshops that allowed us to invite perspectives of different communities – such as Canada's youth, aboriginal peoples and nuclear site communities. Other workshops were targeted to supplement our commissioned research papers, by allowing us to pursue in depth some specific technical, social and environmental issues.

Engagement undertaken in 2003 provides an important foundation for the expanded dialogues that will be under way in 2004. The NWMO's engagement plan is posted on our website at [www.nwmo.ca](http://www.nwmo.ca).

## THE STUDY – A PROCESS OF ENGAGEMENT

### Broadening Our Communications

In addition to face-to-face conversations, the NWMO actively developed a number of other engagement and communications initiatives to inform and seek out input from Canadians.

The Advisory Council suggested that the NWMO, early in its mandate, create a sophisticated interactive website that would support public dialogue and external communications and supplement other models of outreach and engagement. Our website, [www.nwmo.ca](http://www.nwmo.ca), was launched at the end of January 2003. Monthly visits to the site grew from 1,200 in February to almost 5,000 by December. The website is a key instrument in our commitment to transparency and keeping the public informed and up-to-date on all of our activities.

The website is a repository for information produced for, or on behalf of, the NWMO. We make available on our website fact sheets about the organization, our mandate and issues central to our study. Background papers, workshop reports, public attitude research, and our first discussion document are all posted. Our expanded communications activities included the introduction of an NWMO newsletter, which we now publish at regular intervals and make available on our website. In the interest of transparency, we post records of discussion from meetings of both the Advisory Council and the Board of Directors.

In addition to providing valuable information, the website is designed to invite Canadians to share their questions or views on issues relating to our study.

The President's numerous speaking engagements and media interviews resulted in both print and broadcast coverage, raising the profile of the NWMO in 2003.

### Inviting Comment from Canadians – Discussion Document 1

One of the milestone activities of 2003 was the publication in November of our first discussion document.

In "Asking the Right Questions? The Future Management of Canada's Nuclear Fuel" we described our legislative mandate and the way in which we plan to conduct our study. We set out some factual information as background for our dialogue with the public. We described in general terms the range of technical methods that have been advanced for consideration. Finally, we outlined our initial thinking on how we might assess different management approaches by raising some initial questions for our study.

The discussion document raises ten key questions, addressing social, environmental, economic and technical aspects of the different options, and overarching issues such as governance, engagement, ethics, and options for continuous learning and improvement. The questions listed in the document reflect the values and concerns we heard in our early meetings

## THE STUDY – A PROCESS OF ENGAGEMENT

with Canadians, and are intended to spark discussion and guide the development of our detailed criteria for the analysis of management approaches.

The document is an invitation for Canadians to reflect on the complex issues posed by used nuclear fuel, and to provide their perspectives on various approaches for its long-term management and how those approaches should be evaluated. Through this discussion document, we are asking:

- Is the problem correctly described in our document?
- Are the appropriate long-term waste management approaches being considered?
- Are the right questions being asked to assess the different methods?
- Is the NWMO decision-making process understandable and appropriate?

To help us solicit feedback and invite a public dialogue, we are using a number of innovative engagement techniques.

For example, we are convening National Citizens' Dialogues in 2004, to understand Canadians' values and expectations for the long-term management of used nuclear fuel. Through our interactive website, we will also be asking Canadians to provide their perspectives. We are pleased to see that we are already receiving comments. In some cases, feedback has been in the form of comments and personal reflections on issues raised in the document. In other instances, we have received questions and inquiries.

Comments that we receive will help us to refine our assessment of the different management approaches.

### Seeking the Views of Canadians

Benchmarking the opinions of Canadians was another important initiative for the NWMO during the past year.

In April and May 2003, we commissioned a nation-wide survey of 1,900 Canadians. This research built upon the qualitative focus group research that we initiated in 2002. We plan to continue this quantitative polling at periodic stages of our study as a direct response to the Advisory Council's suggestion that we track public opinion and benchmark shifts in opinions as the NWMO's work proceeds.

In December 2003, we convened focus groups to invite early reaction to our first discussion document.

We report on this public opinion research on pages 18-19.

## THE STUDY – A PROCESS OF ENGAGEMENT

### A Year In Review – What We Heard

Feedback from the public at large, experts, and other communities of interest is a central tenet of the NWMO's study plan. We received a wide range of comments and questions in 2003, from face-to-face discussions, workshops, commissioned papers, feedback from our Board and the Advisory Council, as well as our public opinion research.

Our various engagement activities in 2003 elicited substantial response.

We invited comments on our process and how we plan to undertake our public engagement:

- We were encouraged to involve people from communities with existing nuclear plants in order to draw on their special experiences and insights. We were also urged to engage aboriginal communities and to consider the potential contributions of traditional knowledge to our work. Similarly, we were encouraged to include the perspectives of youth in developing our study.
- Written discussion documents distributed by the NWMO are recognized as a good way of sharing information and focusing dialogue and discussion within different groups and communities.
- We received some early feedback on our first discussion document from a roundtable that we have convened to help us think through the social dimensions of our study:
  - > These individuals reacted favourably to the NWMO taking a new approach to the nuclear waste management problem. They felt that the NWMO was creating a new frame within which to understand the problem and search for solutions – by inviting citizens to help shape the questions to be asked in our analysis and offer comment on how those questions should get answered in the course of our study.
  - > They expressed different opinions about whether the presentation of material in the document is too complex or inaccessible to the average reader, and whether complementary and simpler material is necessary.
  - > They held different opinions about how the NWMO should proceed. Some felt we should continue to engage the public in a discussion of their values, and the problems to be addressed in our study. Others believe we should proceed more directly to a discussion of the management solutions with the public.
  - > There is a diversity of views as to whether it is possible to engage Canadians at the outset of our study in a way that allows us to understand the key values that they hold and would like to see reflected in our work.

## THE STUDY – A PROCESS OF ENGAGEMENT

- The NWMO website is accepted as a very important and useful way of reaching out to Canadians, but we are reminded not to rely exclusively on it, because not everyone has access to the internet or refers to it on a regular basis for information.
  - Our early conversations made it clear that the public wants to be comfortable with our process, and they want to know that there are opportunities for interested Canadians to become involved.
  - Our public attitude research revealed that while a large percentage of Canadians believe that the general public should be involved in the NWMO study, only a small percentage said they would personally like to be involved. This suggests a challenge for the NWMO in engaging the general public in dialogue.
- Many shared preliminary thoughts with us about how we should analyze the different management approaches:
- First and foremost, we heard support for the involvement of Canadian and international scientists and engineers from the nuclear industry. Their participation is seen to be integral to the NWMO study to ensure that the most advanced and current thinking is reflected in our initiatives. Expert research and multi-party evaluation is expected to provide a foundation for our work.
  - Many stressed the need for us to consider the perspectives of a broad range of individuals and groups in our study. It is not acceptable to most Canadians for the NWMO to focus solely on experts – both experts and the public at large need to make important contributions to our work.
  - We are expected to pay close attention to Canadian regulatory standards already in place as well as to evolving regulations and standards around the world. The principles established by Canadian regulatory authorities are considered important, as is the work of international organizations with expertise in oversight of nuclear operations.
  - We were advised to be mindful of evolving technology and knowledge, and possible societal and policy shifts that change the environment in which we live. In this regard, many feel we should build flexibility into our proposal to allow for the incorporation of new knowledge as it evolves.
  - Some want reassurance that a broad range of issues that mattered to them would be carefully considered in the assessment. Examples of issues raised by individuals include:
    - > Health and safety
    - > Environmental protection, and preservation of land and natural resources that support livelihoods
    - > Ethics and social justice
    - > Impact on and involvement of Canada's aboriginal peoples
    - > Security and the implications of our work in relationship to 9/11
    - > Socio-economic impacts of hosting a waste management facility

## THE STUDY – A PROCESS OF ENGAGEMENT

- > Transportation and risks in moving used nuclear fuel
- > Financial considerations, and how to ensure adequate funding into the future
- > The impacts and consequences on future generations.

Reflecting back on our discussions to date, we can make some other observations:

- One of our objectives has been to understand the public's perception of used nuclear fuel issues. Some Canadians hope that the NWMO process will lead to a proposed solution and timely government decision on a management approach, rather than simply more public debate on the issue. Yet others are concerned that resolution of the waste issue will pave the way for more use of nuclear power in the future.

- Some Canadians express cynicism concerning the role of the nuclear industry in the NWMO's governance structure, as mandated under the *Nuclear Fuel Waste Act*, making their support for the process tentative. Some question how the NWMO can act independently with an industry-based Board of Directors. Concurrently, we heard that public confidence in the process would be bolstered by a meaningful role for our Advisory Council, in providing an active and independent voice.
- Our undertaking is challenging in that no single correct analytical framework exists by which to compare options. In the end, the framework must be developed through broad dialogue if it is to reflect accurately the values and perspectives of Canadian society.
- Clearly, not all Canadians feel the same way about the issues or the choices to be made in selecting a management approach. The diversity of views offered is an important reminder that achieving consensus may not be possible. Informed individuals can and do hold

varying opinions on how Canada should proceed on this issue.

- From early informal conversations across the country, we were told that whatever management approach is ultimately recommended, it must be the product of a fair and transparent study process.
- A well-conducted study that is technically sound and offers an approach that is secure and safe for the environment and neighbouring communities is seen as an important element in fostering public comfort with the management approach that is recommended.

In the sections that follow we present highlights from our public opinion research.

We have sought to integrate the advice and priorities of Canadians into our study plan, our engagement plan, and the overall approach to our work.

## THE STUDY – A PROCESS OF ENGAGEMENT

### National Survey – April – May 2003

The NWMO commissioned a telephone survey of 1,900 individuals from coast to coast to explore the early expectations of Canadians about how we might conduct our study. The 64 survey questions examined Canadians' perceptions on nuclear waste management and the NWMO; their interest in this issue and the knowledge they currently have; and their preferences for how the NWMO study is conducted and who should be involved.

Some key findings that emerged from this nation-wide survey are provided below.

- Unprompted, the management of used nuclear fuel is not an issue of concern to Canadians. They tend not to think about it on a daily basis. However when the issue is raised, more than 50 per cent say they consider it to be a very important issue.
- Few Canadians feel they know a significant amount about used nuclear fuel or how Canada currently manages it. Few are aware of the NWMO.
- When it is described to them, most Canadians feel that the NWMO's mandate to study and recommend a long-term management approach is an important one, and they are supportive of it.
- The majority surveyed believe that the general public should be involved in the NWMO study. However, only a small percentage said they would personally like to be involved.
- Many Canadians indicate they are generally interested in learning more about the management of used nuclear fuel and about the NWMO and its study. While high public interest is evident, there is only a low to moderate likelihood that the public will seek out information. The preference is for more passive sources for obtaining information.
- Canadians also express an interest in learning more about how other countries manage used nuclear fuel.
- According to Canadians surveyed, the study needs to include, first and foremost, Canadian and international

engineers and scientists in the nuclear energy industry. It also needs to include representatives of communities with nuclear power plants, environmental groups, an independent advisory council, and the general public.

- Canadians tend to be split on the use of nuclear power for generating electricity. This is important contextual information for the NWMO as we engage Canadians in a dialogue about long-term management approaches for used nuclear fuel.

### Focus Groups – December 2003

In December 2003, we commissioned qualitative public opinion research to gauge reaction to our first major discussion document, "Asking the Right Questions? The Future Management of Canada's Used Nuclear Fuel".

Focus group meetings were convened in three Ontario communities. The NWMO was interested in general reaction to the document as well as suggestions that would help us improve or refine the next phase of our work and future discussion documents.

For more information on our public opinion research, and what we have heard during our study, please visit our website at [www.nwmo.ca](http://www.nwmo.ca).

## THE STUDY – A PROCESS OF ENGAGEMENT

### Comments on the discussion document:

- Participants responded positively to the discussion document and the study approach being taken by the NWMO. Most participants found that the document was easy to read and said it answered their initial questions. Many felt the document was sufficiently detailed. However, some were eager for more details and discussion about the management approaches, in order to start considering the relative merits of each.

### Comments on the approach suggested by the NWMO for the analysis:

- The research indicates that the proposed analytical framework reflects public values. Participants were able to see their values and concerns reflected in the questions raised in the document. Views differed on the relative importance of the key questions.
- Suggestions regarding the analytical framework included:

> Provide a management option that is reversible.

> Allow science the flexibility to develop new solutions for waste.

> Benchmark the solution against international standards and best practices set by international bodies.

- Some participants suggested that the proposed questions and process may result in an overly complicated framework with which we risk never reaching a conclusion.
- Others approved the NWMO's proposed method of selecting which management approaches should receive further study. Participants approved of the NWMO's proposal to focus on the methods mandated in the *Nuclear Fuel Waste Act* along with those receiving significant international attention.
- We were encouraged to be open to new science or new ideas that could provide a future solution.

### General observations:

- Some participants commented that the structured presentation of the report enhanced their confidence that the NWMO is doing its work in a disciplined way. At the conclusion of the focus group discussions, most participants expressed a positive impression of the NWMO and its work to date, suggesting that there is nothing significant in the actions of the NWMO or its report to cause serious concerns regarding the organization.
- Public knowledge and intensity of reaction on the issue of managing nuclear waste continue to be low. Participants were not intensely interested in the issues.
- Public cynicism about waste management is a challenge for the NWMO.

We look forward to receiving more feedback on our November 2003 discussion document in the months ahead.

## BUILDING A FRAMEWORK FOR OUR ASSESSMENT

### Reporting On Our Research and Analysis

#### REACHING OUT TO THE EXPERTS

To date, we have actively engaged more than 25 scientific and technical advisors, and more than 35 advisors on matters of legal, governance and institutional management. Amongst the accomplished Canadians consulted in our work, are a great many individuals known internationally for their respective areas of specialized research. When taking into consideration the expert advice provided by participants in our many workshops and roundtables, our family of expert advisors extends to well over 200.

In 2003 we undertook a number of activities that were designed to lay the groundwork for our analysis of management approaches.

Early in 2003, we developed background information that could be shared publicly and which set the context for our study. We reported on the volume and characteristics of Canada's used nuclear fuel, where it is stored, and how it is presently managed and overseen by regulatory authorities.

We initiated an extensive research agenda in 2003. We commissioned Canadian and international experts to develop more than 40 background papers as preparatory work which will support our assessment. The papers present concepts and contextual information about the state of the world's knowledge on topics important to our study. The intent of these papers and reports is both to inform our assessment of approaches for the long-term management of used nuclear fuel and to contribute to an informed dialogue with the public and other stakeholders.

Papers address such topics as: potential management systems; financing considerations; the status of biospheric and geospheric research; legal and administrative frameworks; and lessons learned from other experiences with hazardous waste management.

Some of our papers address specific concepts which are often used to identify and clarify solutions to difficult public policy issues. We looked at the concept of sustainable development, and how it might be applied to our study. We examined the concepts of risk

and uncertainty, the precautionary approach to decision-making, and the concept of adaptive management – all of which have relevance in making decisions when faced with uncertainty and incomplete knowledge.

Broad subject areas covered in these papers and reports are highlighted on page 21. We make our research papers and reports available on our website ([www.nwmo.ca](http://www.nwmo.ca)).

To explore in detail the issues arising in our research papers, we convened workshops and roundtables to examine aspects of used fuel management such as social issues, environmental concerns and technical considerations. In conducting these focused sessions, we often sought the assistance of third parties to advise us on participants, provide expertise in citizen engagement and offer facilitation skills to ensure an objective, full and fair dialogue.

## BUILDING A FRAMEWORK FOR OUR ASSESSMENT

### NWMO BACKGROUND PAPERS AND REPORTS

The topics of papers commissioned by the NWMO can be classified under the following headings:

1. Guiding Concepts – Describe key concepts, often used in the exploration of difficult public policy issues, which might help guide and inform our examination and assessment of approaches by suggesting important questions for the study to ask and answer. In these papers we cover such topics as: sustainable development; the precautionary approach to risk appraisal; adaptive management; security; risk and uncertainty; aboriginal wisdom; and discussion of the long time dimensions to be considered in our work.
2. Social and Ethical Dimensions - Suggest social and ethical dimensions of managing radioactive waste for the purpose of promoting broader dialogue on these important considerations.
3. Health and Safety – Provide information on the status of relevant research, technologies, standards and proce-

dures to reduce the radiation and security risk of managing radioactive waste.

4. Science and Environment – Provide information on relevant scientific and environmental research, including the status of 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 technical methods to be studied for the long-term management of used nuclear fuel as defined in the *Nuclear Fuel Waste Act*, as well as other possible methods and related system requirements.
7. Institutions and Governance - Outline the current relevant legal, administrative and institutional requirements applicable to the long-term management of used nuclear fuel in Canada, including legislation, regulations, guidelines, protocols, directives, policies and pro-

cedures of various jurisdictions.

8. Workshop Reports – Provide information on the outputs and outcomes of some NWMO engagement activities including discussions and expert workshops.

Some of these targeted initiatives held in 2003 are outlined below:

- We examined technical aspects of managing nuclear fuel waste in a workshop conducted at McMaster University in Hamilton, Ontario in September 2003. Approximately 50 experts participated, drawn from business and industry, academia, government, and the not-for profit sector. Participants provided advice to us on the key technical questions relating to the storage and disposal, transportation and monitoring and management of used nuclear fuel.
- In mid-September 2003 we convened a workshop to discuss the environmental aspects of used nuclear fuel. We met with eleven experts from business and industry, academia, government and

## BUILDING A FRAMEWORK FOR OUR ASSESSMENT

the not-for-profit sector. The discussion and suggestions focused on the need for long-term monitoring of environmental effects, required governance and accountability structures, and public opportunity for input.

- We established a roundtable of ethicists to help the NWMO identify and make explicit ethical considerations, and to ensure such considerations are systematically integrated into our analysis of different management approaches.
- We initiated meetings with aboriginal representatives from across Canada.
  - > We held a meeting of aboriginal elders, traditional knowledge holders, practitioners and academics to explore whether Traditional and Indigenous Knowledge can help guide our study.
  - > We convened an early workshop to explore possible directions for a comprehensive engagement plan with aboriginal peoples. Flowing from this work, we made contact with each of the five national aboriginal organizations in Canada. We look forward to working with them. We have invited each organization to work collaboratively with the NWMO in the design and delivery of consultation programs in their respective communities.
- > We contacted 43 aboriginal participants from the Seaborn Panel process, welcoming their participation in our study. We further benefited from aboriginal participation in a number of our activities convened in 2003, including the Scenarios Workshop and Ethics Roundtable.
- We initiated dialogues with Canadians who live in communities that host nuclear operations. We are looking to these communities to draw on the knowledge and experiences of people who have lived with nuclear waste.
  - > We held a Community Dialogue Planning Workshop in 2003 with communities that have an interest and a substantive background in nuclear waste management. For the first time ever, representatives from the seven host communities had a forum in which they could share perspectives. Workshop participants met to think through the most effective means of engaging them in our work.
- > We invited participants to provide advice on engagement approaches most responsive to the concerns and interests of their communities. The meetings were facilitated by the Simon Fraser Centre for Dialogue. We will be building on this work in 2004.
- The NWMO held a number of meetings with governments in 2003.
  - > We met with local elected officials from the different nuclear host communities.
  - > We met with federal and provincial governments to keep them apprised of our progress with the study.

## BUILDING A FRAMEWORK FOR OUR ASSESSMENT

- > As part of our introductory meetings, the NWMO made a presentation to the federal Standing Committee on Environment and Sustainable Development.
- We reached out to the 173 organizations and the Scientific Review Group members who participated in the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment Panel led by Mr. Blair Seaborn. In writing to these former Panel participants, we introduced the NWMO, provided advance notice of the first discussion paper, and encouraged their involvement in our work.
- As part of our 2003 research, we visited Canada's seven nuclear reactor sites and held conversations with the nuclear energy corporations, who as owners of used nuclear fuel, have important expertise and knowledge acquired through years of managing used nuclear fuel.
- We also benefited from a vast amount of technical research that the joint waste owners had commissioned collaboratively, in advance of the establishment of the NWMO. The waste owners have made this body of work available to us as a resource for our study. This work, undertaken by consultants with expertise in this area, addresses the conceptual engineering design work for options referenced in the *Nuclear Fuel Waste Act* – deep geological disposal, centralized storage and storage at reactor sites – and supporting transportation systems. Complementary work commissioned by the waste owners on cost estimates has also been provided to us, which we have submitted for a third-party review.
- Last but not least, we looked to the future.
  - > We convened a Scenarios Team to explore what kind of conditions may be faced in managing used nuclear fuel in the future. Although we cannot know with certainty what future societies will look like, we can try to anticipate societal conditions by envisioning a broad range of possibilities. Our desire to prepare as best as possible for any eventuality reflects amongst other things, the importance we attach to fulfilling our responsibility to future generations in the recommendations we make today.
- > This Team was comprised of 26 individuals drawn from a range of interests and locations across Canada. They considered scenarios ranging from a 25 year horizon to 175 years, 500 years, and 10,000 years.
- > The Team sought to highlight conditions under these different scenarios that could influence a decision about the choice and design of a management approach for used nuclear fuel. Results of this work, available on our website, will provide an additional lens through which we might assess the approaches.

## BUILDING A FRAMEWORK FOR OUR ASSESSMENT

### REACHING OUT INTERNATIONALLY

We made a number of important research contacts in other jurisdictions during 2003 to strengthen our understanding of techniques and methods being studied or pursued by organizations in other countries.

We visited organizations working on nuclear waste management in other countries, such as Belgium, Sweden, Finland, Japan and the United States. We met with several international agencies which are studying long-term management options for used nuclear fuel. NWMO staff participated in international workshops convened on social and technical aspects of the management issue.

We met with government departments in other countries to understand the lessons they have learned and the paths that they are pursuing. We had very useful information exchanges with the International Atomic Energy Agency. The NWMO supported the Government of Canada's participation in the First Review Meeting of the Joint Convention of the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

These meetings helped us to stay abreast of international standards and best practices for the long-term management of used nuclear fuel.

### Laying The Groundwork For Our Assessment

In 2003 we developed the underpinnings for our comparative assessment of the different management approaches.

#### IMPORTANT LESSONS LEARNED

Based on our engagement in early 2003 and our early research, we have learned some key lessons about the issue of managing used nuclear fuel by looking at the question from a variety of perspectives:

- In deciding on a management approach, it is important to consider the impact of decisions not only on ourselves, society and the environment right now, but also how those decisions will affect the well-being of future generations. There needs to be a sense of equity or fairness in how costs, benefits and risks are shared – not only among those now living, but across generations.

## BUILDING A FRAMEWORK FOR OUR ASSESSMENT

- Risk and uncertainty are important issues which need to be addressed in choosing a management approach. Although much is known, there is some risk and uncertainty associated with predicting: (1) how nuclear waste management approaches will perform over many thousands of years; and (2) the capabilities of future societies to take care of this material should it be required. Our early conversations suggest that, throughout the study, it is important to address risk and uncertainty clearly.
- Scientific and technical evidence and analysis, while essential to the task of assessing and addressing risk and uncertainty, cannot be the sole basis of decision-making. It is important that we also consider the values of Canadians, impacted individuals and communities. Alternative social and ethical values need to be clearly identified, and assumptions examined, throughout the study.
- We must take into account both quantifiable and non-quantifiable (or qualitative) costs, benefits and risks.
- Social institutions, rules, regulations and systems which are in place are important considerations in assessing management approaches. While our collective capacities to act, to monitor, to regulate and to make adjustments are matters of uncertainty, there is also an opportunity to strengthen and enhance each management approach.
- There is value in flexibility because it allows us to:
  - > Incorporate new knowledge as it becomes available;
  - > Adjust to the nature and magnitude of used nuclear fuel, if projections of these characteristics change; and
  - > Respond to societal or policy shifts beyond the scope of this study.

### FRAMING THE KEY QUESTIONS

Based on what we heard in our meetings with Canadians and guided by initial research, we set out some key questions in our discussion document 1 that we propose form the basis of our assessment of approaches. (See page 26.)

Using those broad questions as a guide, we plan to develop detailed criteria and questions with which to assess each management approach.

Going forward, our study approach ensures that the comments and concerns of citizens will be carefully considered as we undertake our assessment. The assessment will also draw on the insights of specific communities of interest and the best academic, technical, and scientific advice available in Canada and elsewhere.

## KEY QUESTIONS

### Overarching Aspects

#### Q-1. INSTITUTIONS AND GOVERNANCE:

Does the management approach have a foundation of rules, incentives, programs and capacities that ensure all operational consequences will be addressed for many years to come?

#### Q-2. ENGAGEMENT AND PARTICIPATION IN DECISION MAKING:

Does the management approach provide for deliberate and full public engagement through different phases of the implementation?

#### Q-3. ABORIGINAL VALUES:

Have aboriginal perspectives and insights informed the direction, and influenced the development of the management approach?

#### Q-4. ETHICAL CONSIDERATIONS:

Is the process for selecting, assessing and implementing the management approach one that is fair and equitable to our generation, and future generations?

#### Q-5. SYNTHESIS AND CONTINUOUS LEARNING:

When considered together, do the different components of the assessment suggest that the management approach will contribute to an overall improvement in human and ecosystem well-being over the long term? Is there provision for continuous learning?

### Social Aspects

#### Q-6. HUMAN HEALTH, SAFETY, AND WELL-BEING:

Does the management approach ensure that people's health, safety, and well-being are maintained (or improved) now and over the long term?

#### Q-7. SECURITY:

Does this method of dealing with used nuclear fuel adequately contribute to human security? Will the management approach result in reduced access to nuclear materials by terrorists or other unauthorized agents?

### Environmental Aspects

#### Q-8. ENVIRONMENTAL INTEGRITY:

Does the management approach ensure the long-term integrity of the environment?

### Economic Aspects

#### Q-9. ECONOMIC VIABILITY:

Is the economic viability of the management approach assured and will the economy of the community (and future communities) be maintained or improved as a result?

### Technical Aspects

#### Q-10. TECHNICAL ADEQUACY:

Is the technical adequacy of the management approach assured and are design, construction, and implementation of the method(s) used in the management approach based on the best available technical and scientific insight? By method, we mean the technical method of storage or disposal of the used fuel.

## LOOKING AHEAD

In 2004, the NWMO will focus on its assessment of different management approaches, and will continue to invite feedback from Canadians. Work has begun to develop integrated management approaches and institutional and management structures.

The relationship between the engagement process and the research and analysis processes continues to be interactive. Findings from the public engagement process will help to support elaboration of the analysis and the development of implementation plans. Similarly, findings from the analysis will be integrated into the outreach and consultation programs.

In this section of the Annual Report, we share the key milestones that we have set for ourselves for 2004.

### KEY MILESTONE ACTIVITIES FOR THE NWMO IN 2004

- Public consultation around discussion document 1 – focused on the fundamental issues and questions to be addressed in the assessment
- Our initial assessment of the different management approaches
- Publication of discussion document 2 – summarizing the assessment results
- Public consultation on discussion document 2 – focused on our preliminary assessment of management approaches
- Our refinement of the management approaches and the comparative assessment – taking into consideration public comments
- Development of detailed implementation plans.

### Engaging Canadians

The NWMO will nurture a broad-based program of citizen and stakeholder engagement in 2004 to review and discuss key perspectives and issues arising from discussion documents 1 and 2. Examples of these initiatives are provided below.

- In partnership with the Canadian Policy Research Networks (CPRN), the NWMO initiated National Citizens' Dialogues in early 2004. These dialogues will be convened in twelve locations across the country, bringing together members of the public who have been randomly selected by a polling firm and who, as a group, are representative of the local demographics of each area. The dialogues will help us understand the underlying values that are important to citizens when considering the long-term management of used nuclear fuel. As a proxy for the Canadian public at large, participants in these dialogues will help show us how Canadians approach, assess, and make tradeoffs around these complex issues.

## LOOKING AHEAD

- The NWMO will continue to work collaboratively with the national aboriginal organizations. We will also look at ways to expand our aboriginal engagement in 2004. We are continuing to engage aboriginal participants in expert panels and workshops.
- We will continue our conversations with nuclear site communities and discussions with local elected officials in those communities.
- Our website will continue to serve as the key repository for material we produce, and we will continue to provide interactive opportunities for public participation, through e-dialogues on selected topics, web-based polls, and invitations to share comments and submissions.
- In addition, the NWMO will be seeking public comment throughout 2004 as we implement a range of outreach mechanisms. The focus of discussions will be on the NWMO's discussion documents and on selected topical issues that are key to the study.

### Assessing The Management Approaches

We have established an assessment team to lead the NWMO's analysis of options for managing used nuclear fuel over the long term. This team brings together individuals with broad experience and expertise in social issues, citizen engagement, science, nuclear engineering, environmental protection, economics and risk assessment. This team is designed to support a truly integrative assessment of management approaches, as we apply the foundations of sustainable development to our study.

The assessment team will begin by building and refining a comprehensive analytical framework, based on the key questions that we have set out in our first discussion document.

The team will then undertake initial testing of the various management approaches, using this analytical framework.

We will summarize the results of the team's work in our second major discussion document, planned for release in 2004. The purpose of discussion document 2, "Understanding the Choices", is to describe the preliminary assessment of specific management approaches.

The initial assessment work is targeted for completion by mid-2004. Refinements of the assessment will continue to the end of the study period in 2005.

We will not be making recommendations on a path forward until we have had the benefit of further consultation and discussion with Canadians on our analysis. Once we have had this public dialogue around our second discussion document, we will refine our assessment and develop draft recommendations to be published in 2005.

## LOOKING AHEAD

We will also be seeking the views of internationally known experts to provide additional assurance that we are integrating in our study the most advanced international thinking on social, scientific and technical research – elements that Canadians have identified as essential for ensuring the integrity of our work.

These initiatives all support our mandate under the *Nuclear Fuel Waste Act* and help ensure that our research and analysis is continually bolstered by feedback from individual Canadians; communities of special interest, including nuclear host site communities, aboriginal representatives, and interested provincial and federal government departments; and international organizations engaged in issues related to managing nuclear waste.

### MILESTONE DOCUMENTS

Our first discussion document was published in November 2003. Entitled “Asking the Right Questions? The Future Management of Canada's Used Nuclear Fuel”, the document was designed to invite public comment on the issues to be raised and questions to be asked as the NWMO analyzes different approaches for the long-term management of Canada's used nuclear fuel.

In mid-2004, we will publish discussion document 2, “Understanding the Choices”. It will build on discussion and feedback from the first document and it will invite comment on our preliminary analysis of the different management approaches.

In early 2005, we will publish, “Choosing a Way Forward (Draft)”. Building on the earlier documents and the dialogue they foster, it will provide a refined comparative assessment of the management approaches we study. It will articulate a draft set of recommendations and propose implementation plans for further review and comment.

Our final report, “Choosing a Way Forward,” will be published and submitted to the Minister of Natural Resources by November 15, 2005 in compliance with the *Nuclear Fuel Waste Act*. In this report we will provide a final comparative assessment of the management approaches and implementation plans, and our final recommendations. We will also summarize public commentary on the alternative approaches, including implementation strategies. In addition, we will transmit the comments of the Advisory Council about the study and the proposed approaches.

The Advisory Council >

The Trust Funds >

The Corporate Profile >

The *Nuclear Fuel Waste Act* requires the NWMO to create a broadly-based Advisory Council to examine and provide written comments on the NWMO study and recommendations. The Advisory Council must provide comments on the NWMO's study and each of the proposed management approaches. The NWMO must submit the Council's comments to the Minister of Natural Resources Canada, and make those comments available to the public.

## THE ADVISORY COUNCIL

### Operations

The Advisory Council was established by the NWMO Board of Directors in the Fall of 2002 under the requirements of the *Nuclear Fuel Waste Act*.

It has a statutory responsibility to review and provide its own written comments on the NWMO study and approaches considered in the study. These independent comments are to be included in our study when it is submitted to the Minister of Natural Resources Canada and made public.

In addition, the Advisory Council has agreed to provide the NWMO with arms-length guidance throughout the study period. For example, Council members have been providing comment and advice on our approach to public engagement, the design of consultation processes and work plans supporting our study.

The Advisory Council has structured its meetings to reflect this dual sense of accountabilities.

- Meetings include in camera sessions for private deliberations among Council members.

- In addition, the sessions are structured to enable the NWMO President to provide extensive reports and invite Council discussion on key elements of the NWMO work plan.

- To support their independent role in commenting on the NWMO study, Council members identify issues or questions that they would like addressed by the NWMO.

At its first meeting, the Council indicated that its role would be strengthened by staying abreast of the broader developments within the organization. To assist in this regard, members requested that the Board and President arrange for regular updates so that they would be well informed and well prepared to comment and advise. In response, the Board has invited the Advisory Council Chairman to attend all Directors meetings, providing him with direct access to Board deliberations, and enabling him to keep Council members up to date on the Board's deliberations and thinking. In addition, the President instituted a process for updating both the

Advisory Council and the Board of Directors on a monthly basis.

During 2003, the Advisory Council had five formal meetings, some of which were two-day sessions. At the Advisory Council's request, records of its meetings are publicly available on the NWMO website.

Council members also met with NWMO Directors on occasion to share their views.

In November, Eva Ligeti, Ontario's first Environmental Commissioner and a lawyer, was appointed to the Advisory Council, bringing the number of Council members to nine.

## THE ADVISORY COUNCIL

### 2003 Activities

The NWMO benefited from the valuable input that the Advisory Council has provided throughout the year. Council members discussed and commented on key elements of the 2003 workplan. The President updated the Council at each of its meetings on the NWMO's research and engagement activities, and invited discussion and suggestions on the next steps.

Considerable Council discussion in 2003 related to the NWMO's legislative mandate requiring the NWMO to consult the general public and in particular aboriginal peoples, and how best to undertake that responsibility. Drawing from their respective backgrounds and experiences, the Council members offered advice on how to implement effective public engagement and ensure a meaningful dialogue with Canadians. The Council provided comment and guidance on the NWMO's approach to aboriginal engagement and how to draw on the insight from Traditional Knowledge.

In addition to providing ongoing advice on the NWMO's engagement plans, the Council provided comment on the first discussion document released in November 2003, and offered suggestions on how to structure the document to provide important factual information, stimulate discussion to support a dialogue with the public, and ensure effective distribution.

At the request of the Council, briefings and presentations were provided throughout the year to ensure that they were kept apprised of key issues arising in the NWMO's consultations and public opinion work as well as the research papers commissioned by the NWMO.

Responding to areas of interest identified by the Advisory Council, the NWMO arranged for a number of meetings to provide important context and information in support of the Council's mandate. For example, the Council requested an early session with Mr. Blair Seaborn, the former Chairman of the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment Panel. This January 2003 session allowed the Council to hear from Mr. Seaborn on the

range of public concerns registered with his Panel and some of the key issues that were raised in his Panel's report, including comments on public consultations.

The Council also requested an early meeting with the Reverend Lois Wilson to benefit from her perspectives and reflections from the Panel process. The Council was particularly interested in exploring the ethical issues that arose in that process, including the issue of safety, from both technical and societal perspectives.

The Advisory Council received a briefing by the waste owners on the scope of technical research those companies had recently completed with respect to the conceptual engineering designs for the three technical methods outlined in the *Nuclear Fuel Waste Act*, transportation systems for the centralized facility options, and cost estimates for each technical method.

## THE ADVISORY COUNCIL

At the Council's request, a special presentation was provided by the Canadian Nuclear Safety Commission (CNSC), as an information briefing of the roles and responsibilities of Canada's nuclear regulator and the role the CNSC will play with respect to the licensing of any approach for the long-term management of used nuclear fuel.

Advisory Council members participated in a visit to OPG's Pickering Nuclear Generation Station, to tour wet and dry storage facilities. A Council member also accompanied the President to AECL's Underground Research Laboratory at Whiteshell, Manitoba.

The Council further expressed interest in staying abreast of developments internationally with regard to the long-term management of used nuclear fuel. The NWMO provided the Council with presentations on international developments, and continues to circulate a regular news scan to help track activities globally. In 2003, the NWMO provided opportunities for the Advisory Council to tour the U.S. Yucca Mountain site and meet with US. Department of Energy officials to learn about the experiences encountered in preparing a repository for used fuel.

The NWMO arranged for an official from Natural Resources Canada to provide a briefing to the Council on the role of nuclear power in the context of Canada's energy supply. In March 2003, two Council members participated in an NWMO meeting with the Minister of Natural Resources Canada, the Honourable Herb Dhaliwal, sharing with the Minister some of their own perspectives and reflections on the NWMO process to date.

## THE TRUST FUNDS

The *Nuclear Fuel Waste Act* assigns responsibility to the major owners of used nuclear fuel for the financing of the long-term management of used nuclear fuel.

Under the *Act*, Ontario Power Generation Inc., New Brunswick Power Corporation (NB Power), Hydro-Québec and Atomic Energy of Canada Limited are required to establish trust funds, into which they must make annual payments. The *Act* specifies the amounts of the required payments for each company.

The following initial amounts were deposited to the trust funds in 2002:

ONTARIO POWER GENERATION INC.	\$500,000,000
HYDRO-QUÉBEC	\$20,000,000
NEW BRUNSWICK POWER CORPORATION	\$20,000,000
ATOMIC ENERGY OF CANADA LIMITED	\$10,000,000

In 2003, consistent with the legislation, the four corporations made further contributions to their respective trust funds in the amounts indicated below:

ONTARIO POWER GENERATION INC.	\$100,000,000
HYDRO-QUÉBEC	\$4,000,000
NEW BRUNSWICK POWER CORPORATION	\$4,000,000
ATOMIC ENERGY OF CANADA LIMITED	\$2,000,000

These legislative obligations are the responsibilities of the individual companies named, and not the responsibility of the NWMO. The trust funds are noted here, in light of their significance in the overall provision for long-term nuclear waste management.

As required by the *Nuclear Fuel Waste Act*, the NWMO makes public the audited financial statements of the trust funds when they are provided by the financial institutions annually.

The NWMO may only have access to these funds for the purpose of implementing the management approach selected by Government, once a construction or operating license has been issued under the *Nuclear Safety and Control Act (NSCA)*.

## THE CORPORATE PROFILE – THE CORPORATION

### LEGISLATIVE UNDERPINNINGS

The Nuclear Waste Management Organization (NWMO) operates as a not-for-profit corporation under Part II of the *Canada Corporations Act*.

The mandate of the NWMO is legislated in the *Nuclear Fuel Waste Act*, brought into force November 15, 2002.

The *Nuclear Fuel Waste Act* requires the major owners of nuclear fuel waste to establish the waste management organization to:

- Propose approaches for the management of nuclear fuel waste to the Government of Canada; and
- Implement the approach that is chosen by the Government of Canada.

The *Nuclear Fuel Waste Act* assigns financial responsibility to the nuclear energy corporations through the obligation to establish and fund the NWMO's operations and study.

Accordingly Ontario Power Generation Inc., NB Power and Hydro-Québec were founding members of the

NWMO. Consistent with their statutory obligations, these member companies developed formal cost-sharing provisions for the NWMO's annual operating budget. Together, these corporations developed the underlying governance structures for the NWMO.

The NWMO is to carry out the managerial, financial and operational activities to implement the long-term management of nuclear fuel waste. In the early part of its mandate, the NWMO is to investigate approaches for managing Canada's used nuclear fuel, recommend an approach, and report regularly to the Government of Canada. The NWMO is required to consult the general public, including aboriginal peoples, on each of the proposed approaches.

Under the *Nuclear Fuel Waste Act*, the NWMO must study the following technical methods, at a minimum:

- Deep geological disposal in the Canadian Shield<sup>1</sup>;
- Storage at nuclear reactor sites; and

- Centralized storage, either above or below ground.

The NWMO may study other methods as well.

The *Nuclear Fuel Waste Act* provides a three-year timeline within which the NWMO must complete its public consultations and submit the study and recommendations to Government.

- The study is to be submitted to the Minister, and made public, within three years of the *Nuclear Fuel Waste Act* coming into force (by November 15, 2005).

<sup>1</sup> Based on the concept described by Atomic Energy of Canada Limited (AECL) in the Environmental Impact Statement on the Concept for Disposal of Canada's Nuclear Fuel Waste and taking into account the views of the environmental assessment panel set out in the Report of the Nuclear Fuel Waste Management and Disposal Concept Environment Assessment Panel dated February 1998.

## THE CORPORATE PROFILE – THE CORPORATION

Under the *Nuclear Fuel Waste Act*, nuclear energy corporations (Ontario Power Generation Inc., NB Power and Hydro-Québec) as well as AECL must establish trust funds, into which they must deposit annual payments to finance the long-term management of used nuclear fuel following a Government decision. This legislation specifies the annual contributions to the trust funds required of each of the four corporations.

The *Act* mandates federal Government oversight of the process.

- The NWMO must submit annual reports to the Minister of Natural Resources, and is required to make these reports available to the public.

### OPERATIONS

October 1, 2003 marked the first anniversary of the corporation and also the anniversary of the appointment of its President.

As of the end of the 2003 financial year, the NWMO was operating with a full-time complement of 11 individuals, including the President.

In February 2003, the NWMO members supported a formal change in corporate name for the organization. A by-law was passed to change the official name of the organization from the Used Nuclear Fuel Organization: Options Review, to the Nuclear Waste Management Organization (NWMO). This change was made further to the recommendations of the President and the Advisory Council, for purposes of providing greater clarity and transparency around the organization and its mandate.

THE HEAD OFFICE OF THE NUCLEAR WASTE MANAGEMENT ORGANIZATION (NWMO) IS LOCATED AT 49 JACKES AVENUE , FIRST FLOOR, TORONTO, ONTARIO, M4T 1E2.

## THE CORPORATE PROFILE – THE BOARD OF DIRECTORS

The *Nuclear Fuel Waste Act* required Canada's nuclear energy corporations to establish the NWMO. The composition of the NWMO Board of Directors is consistent with the *Nuclear Fuel Waste Act*, reflecting the Government of Canada's "polluter pay" principle.

The NWMO Board of Directors is currently composed of six directors who are representatives of Canada's three main producers of used nuclear fuel – Ontario Power Generation Inc., Hydro-Québec and NB Power.

The Board is responsible for overseeing the overall administration and governance of the NWMO, including the approval of annual budgetary provisions.

The Board convened five times in 2003. In addition, the Board met with the Advisory Council periodically during the year. In 2003, the Board and President refined internal controls and procedures as the organization moved into its first full year of operation. In further support of transparency, the Board has also directed that the minutes of its meetings be posted on the NWMO's corporate website.

The Board established an Audit, Finance and Risk Committee in 2003, made up of three Board Members. Among the items addressed by the Committee, was the in-year review of budget projections for 2003 and discussion of key elements proposed by the President for the 2004 Business Plan.

During 2003, Stuart Groom, Chief Engineer, Point Lepreau Generating Station, NB Power, retired from the NWMO's Board. NB Power appointed Laurie Comeau as NB Power's new director.

THE CORPORATE PROFILE – THE BOARD OF DIRECTORS

Board of Directors



**RICHARD DICERNI, CHAIRMAN**  
Interim President and Chief  
Executive Officer  
Ontario Power Generation Inc.



**ADÈLE MALO**  
Vice President, Law & General  
Counsel; Vice President,  
Sustainable Development;  
Interim Corporate Secretary  
Ontario Power Generation Inc.



**LAURIE COMEAU**  
Manager, Personnel Safety  
and Environment  
Point Lepreau Generating  
Station, NB Power  
*Appointed September 15, 2003*



**KEN NASH, VICE-CHAIRMAN**  
Vice President  
Nuclear Waste Management  
Ontario Power Generation Inc.



**FRED LONG**  
Vice President  
Financial Planning  
Ontario Power Generation Inc.



**RENÉ PAGEAU**  
Director, Gently-2  
Refurbishment Project  
Hydro-Québec

Officers

**ELIZABETH DOWDESWELL**  
President

**FRED LONG**  
Treasurer

**KATHRYN SHAVER**  
Corporate Secretary

## THE CORPORATE PROFILE – THE ADVISORY COUNCIL

The *Nuclear Fuel Waste Act* required the NWMO to establish an Advisory Council. The NWMO established an arms-length, independent Advisory Council in 2002. It is a broad-based Council composed of individuals knowledgeable in nuclear waste management issues and experienced in working with citizens and communities on a range of difficult public policy issues.

The Act mandates the Advisory Council to examine and provide to the NWMO its independent written comments on the study and the proposed approaches. Advisory Council comments provided to the NWMO will be included in the NWMO's study that is submitted to Government, and also made public.

In addition to commenting on the management approaches and the NWMO study, the Advisory Council will make important contributions to the NWMO through its ongoing advice and guidance to the NWMO Board of Directors and the President. For example, the Advisory Council will:

- Seek to ensure that the views of the public and communities of interest are con-

sidered and are reflected in a thoughtful, balanced way in the proposed approaches and reports of the NWMO;

- Assist the NWMO in ensuring that its processes are of good quality and are open, transparent, thorough and sound; and
- Regularly comment on the manner in which the NWMO discharges its responsibilities.

Council members are appointed for four-year terms. There are presently nine members of the Advisory Council.

### Members of the Advisory Council are:



**HONOURABLE DAVID CROMBIE -  
CHAIRMAN**

The Honourable David Crombie is the current President and CEO of the Canadian Urban Institute. He is a past mayor of the City of Toronto and a Privy Councillor. Mr. Crombie was

the first Chancellor of Ryerson University and is the recipient of honorary doctorates of law from the University of Toronto and the University of Waterloo.



**DAVID CAMERON**

David R. Cameron is a Professor of Political Science at the University of Toronto and a Fellow of the Royal Society of Canada. He has held a number of senior government positions in both the federal and Ontario civil service. He continues to advise on a wide range of governmental issues.



**HELEN COOPER**

Helen C. Cooper has more than 25 years experience in community development, municipal governance, organizational planning and teaching. She is a former mayor of Kingston, Ontario.

THE CORPORATE PROFILE – THE ADVISORY COUNCIL



**GORDON CRESSY**

Gordon Cressy is the President of the Canadian Tire Foundation for Families. A past President of the United Way of Greater Toronto, he has held Vice-President positions at both the University of Toronto and Ryerson University. Mr. Cressy has a lengthy record of community involvement.



**EVA LIGETI**

Eva Ligeti is the Executive Director of the Clean Air Partnership, a non-profit organization with a mandate to make Toronto more environmentally sustainable and a world leader in clean air. A lawyer, she served as Ontario's first Environmental Commissioner from 1994 to 1999.



**DONALD OBONSAWIN**

Donald Obonsawin is the President and CEO of Jonview Canada Inc. He has been Deputy Minister of seven Ontario government ministries over a 15 year period. He has also held senior positions with the federal departments of Indian Affairs and Northern Development and Health and Welfare Canada.



**FREDERICK GILBERT**

Frederick Franklin Gilbert is the President of Lakehead University in Thunder Bay, Ontario. He has had an extensive teaching, research and administrative career in the United States and Canada and has held several environmental and wildlife management public service appointments and positions. His research interests included resource management and the sustainable use of the natural environment.



**DEREK LISTER**

Derek Lister is the Chairman of the Chemical Engineering Department at the University of New Brunswick in Fredericton, where he also holds the Research Chair in Nuclear Engineering. His main research interests are in the areas of chemistry and corrosion associated with nuclear systems.



**DANIEL ROZON**

Daniel Rozon is a Professor of Engineering Physics at École Polytechnique de Montreal. A Fellow of the Canadian Nuclear Society, he is a recognized expert on nuclear affairs and is often called upon to discuss and advise on current issues in the sector.

AUDITORS' REPORT, FINANCIAL STATEMENTS & NOTES

MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying Financial Statements of Nuclear Waste Management Organization (NWMO) are the responsibility of management and have been prepared in accordance with Canadian generally accepted accounting principles. When alternative accounting methods exist, management has chosen those it considers most appropriate. The preparation of financial statements necessarily involves the use of estimates based on management's judgment, particularly when transactions affecting the current accounting period cannot be finalized with certainty until future periods. The financial statements have been properly prepared within reasonable limits of materiality and in light of information available up to January 30, 2004.

Management maintains a system of internal controls which are designed to provide reasonable assurance that financial information is relevant, reliable and accurate and that assets are safeguarded and transactions are executed in accordance with management's authorization. The system is monitored and evaluated by management.

The financial statements have been examined by Deloitte & Touche LLP, independent external auditors appointed by the Members. The external auditors' responsibility is to express their opinion on whether the financial statements are fairly presented in accordance with Canadian generally accepted accounting principles. The Auditors' Report outlines the scope of their examination and their opinions.

February 13, 2004



Elizabeth Dowdeswell  
President



Fred Long  
Treasurer

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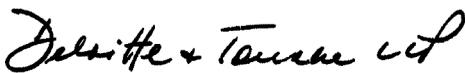
## AUDITORS' REPORT

To the Directors of  
Nuclear Waste Management Organization

We have audited the statement of financial position of Nuclear Waste Management Organization (NWMO) as at December 31, 2003 and the statements of operations, changes in net assets and cash flows for the year then ended. These financial statements are the responsibility of NWMO's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of NWMO as at December 31, 2003 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.



Chartered Accountants  
Toronto, Ontario  
January 30, 2004

STATEMENT OF FINANCIAL POSITION

Statement of Financial Position

AS AT DECEMBER 31, 2003

	2003	2002
<b>ASSETS</b>		
<b>CURRENT</b>		
Cash and Short-Term Investments	\$ 856,784	\$ 1,048,567
Accounts Receivable (NOTE 4)	1,980,132	77,662
Prepaid Expenses and Deposits	-	9,860
	2,836,916	1,136,089
<b>CAPITAL ASSETS (NOTE 3)</b>	206,354	114,604
	\$ 3,043,270	\$ 1,250,693
<b>LIABILITIES</b>		
<b>CURRENT</b>		
Accounts Payable and Accruals (NOTE 4)	\$ 1,208,533	\$ 399,891
Payable to Members (NOTE 5)	-	736,198
	\$ 1,208,533	\$ 1,136,089
<b>COMMITMENT (NOTE 8)</b>		
<b>NET ASSETS</b>		
Invested in Net Capital Assets	\$ 206,354	\$ 114,604
Internally Restricted (NOTE 6)	1,628,383	-
	1,834,737	114,604
	\$ 3,043,270	\$ 1,250,693

APPROVED BY THE BOARD OF DIRECTORS, FEBRUARY 26, 2004:

K. E. Nash

KEN NASH, DIRECTOR, TORONTO, CANADA



FRED LONG, DIRECTOR, TORONTO, CANADA

## STATEMENT OF OPERATIONS

### Statement of Operations

YEAR ENDED DECEMBER 31, 2003	2003		2002	
	(12 MONTHS)		(3 MONTHS)	
<b>REVENUE</b>				
Member Contributions	\$	7,400,000	\$	488,197
Other Income (NOTE 7)		35,938		-
	\$	7,435,938	\$	488,197
<b>EXPENDITURES</b>				
Administration (Note 4)	\$	2,013,197	\$	318,439
Stakeholder Consultation & Communications		2,267,554		128,081
Research and Analysis		1,175,617		-
Advisory Council		204,285		32,622
Amortization		55,152		9,055
		5,715,805		488,197
<b>EXCESS OF REVENUE OVER EXPENDITURES</b>	<b>\$</b>	<b>1,720,133</b>	<b>\$</b>	<b>-</b>

### Statement of Changes in Net Assets

YEAR ENDED DECEMBER 31, 2003	2003				2002
	(12 MONTHS)				(3 MONTHS)
	Invested in Capital Assets	Internally Restricted	Unrestricted	Total	Total
<b>BALANCE, BEGINNING OF PERIOD</b>	\$ 114,604	\$ -	\$ -	\$ 114,604	\$ -
<b>EXCESS (DEFICIENCY) OF REVENUE OVER EXPENDITURES</b>	(55,152)	-	1,775,285	1,720,133	-
<b>INVESTED IN CAPITAL ASSETS</b>	146,902	-	(146,902)	-	114,604
<b>INTERNALLY IMPOSED RESTRICTIONS (NOTE 6)</b>	-	1,628,383	(1,628,383)	-	-
<b>BALANCE, END OF PERIOD</b>	\$ 206,354	\$ 1,628,383	\$ -	\$ 1,834,737	\$ 114,604

STATEMENT OF CASH FLOWS

Statement of Cash Flows

YEAR ENDED DECEMBER 31, 2003	2003	2002
	(12 MONTHS)	(3 MONTHS)
<b>NET INFLOW (OUTFLOW) OF CASH RELATED TO THE FOLLOWING ACTIVITIES</b>		
<b>OPERATING</b>		
Cash received from member contributions	\$ 6,121,510	\$ 1,261,337
Interest received on short-term investments	22,484	-
	\$ 6,143,994	\$ 1,261,337
Cash paid for materials and services	(6,188,875)	(109,890)
	\$ (44,881)	\$ 1,151,447
<b>INVESTING</b>		
Purchase of capital assets (NOTE 4)	(146,902)	(102,880)
<b>NET (DECREASE) INCREASE IN CASH AND SHORT-TERM INVESTMENTS</b>	<b>(191,783)</b>	<b>1,048,567</b>
<b>CASH AND SHORT-TERM INVESTMENTS, BEGINNING OF PERIOD</b>	<b>1,048,567</b>	<b>-</b>
<b>CASH AND SHORT-TERM INVESTMENTS, END OF PERIOD</b>	<b>\$ 856,784</b>	<b>\$ 1,048,567</b>

## NOTES TO THE FINANCIAL STATEMENTS

### I. PURPOSE OF ORGANIZATION

Nuclear Waste Management Organization (NWMO) is a not-for-profit corporation without share capital, established under the Canada Corporations Act, 1970 (“the Act”), as required by the *Nuclear Fuel Waste Act* (Canada), 2002 (NFWA) which came into force November 15, 2002.

The NFWA requires electricity-generating companies which produce used nuclear fuel to establish a waste management organization. Under the NFWA, the NWMO must establish an Advisory Council, conduct a study and provide recommendations on the long-term management of used nuclear fuel to the Government of Canada within 3 years of the NFWA coming into force. In conducting this study the NWMO must utilize a wide-ranging public consultation process and seek the input of its Advisory Council. As part of the long-term mandate, the NWMO must implement and operate the management approach that is selected by the Government of Canada to address used nuclear fuel.

The NWMO formally began operations on October 1, 2002. Its founding members are Hydro-Québec, NB Power, and Ontario Power Generation Inc., (“Members”) – which are Canadian companies that currently produce used nuclear fuel as a by-product of electricity generation.

Pursuant to a Membership Agreement, the costs of the NWMO are shared pro rata by the Members based on the number of used fuel bundles owned by each member.

### 2. SIGNIFICANT ACCOUNTING POLICIES

#### Basis of Presentation

These financial statements of NWMO are the representations of management prepared in accordance with accounting standards for not-for-profit organizations established by the Canadian Institute of Chartered Accountants using the deferral method of reporting restricted contributions. The significant accounting policies adopted by NWMO are as follows:

#### Capital Assets

Capital assets are recorded at cost. Amortization is provided for on a straight-line basis over their estimated useful lives as follows:

Furniture	7 years
Computer equipment	3 years

#### Investments

Short-term investments are recorded at the lower of cost and market value.

## 2. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

### Deferred Member Contributions

Contributions are recognized as revenue in the year in which the related expenses are incurred. Contributions received in excess of expenditures are recorded as deferred member contributions.

### Income Tax

The NWMO is a not-for-profit organization and, pursuant to section 149(1)(1) of the Income Tax Act, is not subject to income tax.

### Fair Value of Financial Instruments

The carrying values of cash, accounts receivable and accounts payable and accruals approximate the fair values on a discounted cash flow basis because of the near term nature of these instruments.

### Use of Estimates

The preparation of financial statements in conformity with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Due to the inherent uncertainty in making estimates, actual results could differ from those estimates.

## 3. CAPITAL ASSETS

	2003			2002
	Cost	Accumulated Depreciation	Net Book Value	Net Book Value
Furniture	\$ 84,704	\$ 8,846	\$ 75,858	\$ 25,160
Computer Equipment	185,856	55,360	130,496	89,444
	\$ 270,560	\$ 64,206	\$ 206,354	\$ 114,604

## 4. RELATED PARTY TRANSACTIONS

### Transactions during the period

	2003 (12 MONTHS)	2002 (3 MONTHS)
Contributions received and/or due from:		
Ontario Power Generation Inc.	\$ 6,700,000	\$ 1,191,710
NB Power	350,000	77,662
Hydro-Québec	350,000	69,628

## 4. RELATED PARTY TRANSACTIONS (CONTINUED)

	<u>2003</u>	<u>2002</u>
	(12 MONTHS)	(3 MONTHS)
Products and services acquired from:		
Ontario Power Generation Inc.		
Office furniture	\$ 1,971	\$ 500
Managerial services	848,689	284,224
External consulting services	-	27,520
<u>Balances outstanding</u>		
Due to Ontario Power Generation Inc. (included in accounts payable and accruals)	\$ 82,410	\$ 311,754
Amounts due from and included in accounts receivable		
Ontario Power Generation Inc.	\$ 1,835,305	\$ -
NB Power	109,328	77,662
Hydro-Québec	35,499	-

## 5. PAYABLE TO MEMBERS

Unspent member contributions may be refunded to members or internally restricted by the Board of Directors for contingency purposes. The following shows amounts payable to members for the fiscal period ended December 31:

	<u>2003</u>	<u>2002</u>
	(12 MONTHS)	(3 MONTHS)
Balance, beginning of period	\$ 736,198	\$ -
Amount designated to be refunded	-	736,198
	\$ 736,198	\$ 736,198
Less amount refunded to members	(736,198)	-
Balance, end of period	\$ -	\$ 736,198

#### 6. INTERNALLY RESTRICTED NET ASSETS (CONTINGENCY FUND)

Member contributions	\$ 7,400,000
Other income	35,938
Expenses	(5,660,653)
<hr/>	
Excess of revenue over expenditures for the period	\$ 1,775,285
Less: Capital purchases	(146,902)
<hr/>	
Funds available for internal restriction	\$ 1,628,383
Balance, beginning of period	-
<hr/>	
Balance, end of period	\$ 1,628,383

The Board of Directors, on October 28, 2003, approved a transfer of deferred member contributions in the amount of \$1,628,383 to internally restricted net assets (contingency fund) for future use.

#### 7. OTHER INCOME

	2003 <hr/> (12 MONTHS)	2002 <hr/> (3 MONTHS)
Interest income	\$ 22,484	\$ -
GST credits	13,454	-
<hr/>		
	\$ 35,938	\$ -

#### 8. COMMITMENT

NWMO signed a 3-year sub-lease agreement for its offices at 49 Jackes Avenue, Toronto, Ontario effective December 1, 2002. The lease provides for the first month of occupancy to be rent-free which is being amortized over the life of the lease. Annual total lease payments are \$129,627 and are subject to adjustment for cost sharing of common areas of the office that are shared with another tenant of the building and changes to operating costs over the term of the lease.

The estimated annual payments over the next two years are as follows:	2004	\$ 129,627
	2005	118,825

#### 9. COMPARATIVE FIGURES

Certain of the prior year's figures have been reclassified to conform with the current year's presentation.

## CONTACT INFORMATION

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