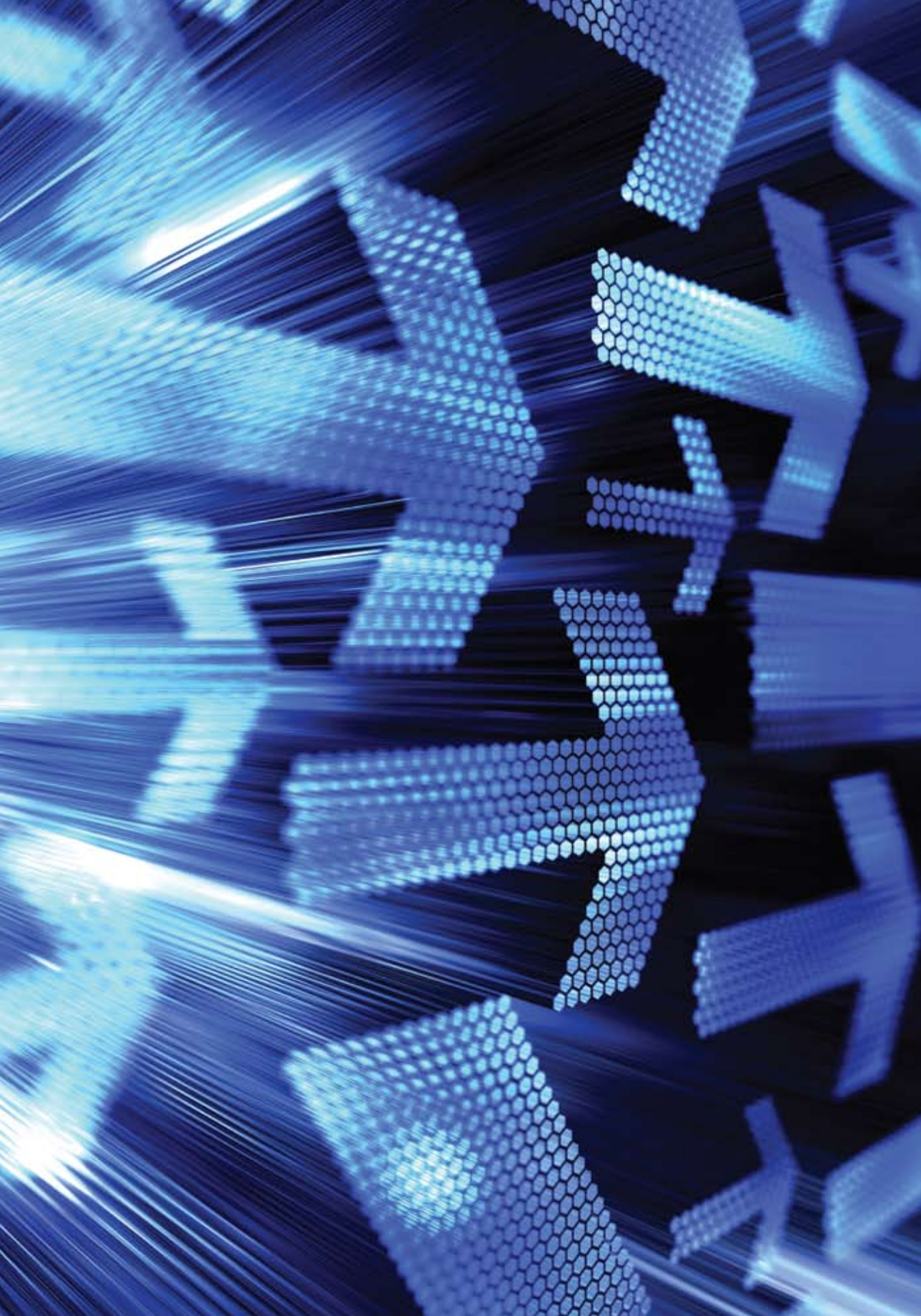
nwmo

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

# Moving Forward Together

Annual Report 2009



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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

The Honourable Christian Paradis
Minister, Natural Resources Canada
Ottawa, Ontario
K1A 0A6

March 2010

Dear Minister,

We are pleased to submit to you the annual report of the Nuclear Waste Management Organization (NWMO) for fiscal year 2009.

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,

Gary Kugler
Chairman

K. E. Nash
Ken Nash
President

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# Contents

# Corporate Overview

**NWMO Mandate**: The Nuclear Waste Management Organization (NWMO) was established in 2002 by Canada's nuclear electricity producers in accordance with the *Nuclear Fuel Waste Act* (*NFWA*). The organization operates on a not-for-profit basis under Part II of the *Canada Corporations Act*.

Ontario Power Generation Inc., New Brunswick Power Corporation and Hydro-Québec are the founding Members, and along with Atomic Energy of Canada Ltd., are required to fund NWMO's operations. The Member corporations develop the underlying governance structures for the organization and also the cost-sharing provisions for NWMO's operating expenses.

The *NFWA* required the NWMO to provide recommendations to the Government of Canada on the long-term management of used nuclear fuel. The NWMO initiated a study in 2002, and in 2005 submitted to the Minister of Natural Resources proposed approaches for the long-term management of Canada's used nuclear fuel, comments of its Advisory Council and a recommended approach called Adaptive Phased Management (APM).

In June 2007, the Government of Canada, authorized by the *NFWA* to decide on a management approach, selected the recommended approach. The NWMO is now responsible for implementing APM, subject to all the necessary regulatory approvals. We are committed to proceeding in stages, in an open, transparent and inclusive manner, taking the time that is needed to collaboratively plan and then confirm each step with Canadians before moving forward to the next.

All of Canada's used nuclear fuel is safely stored on an interim basis in licensed facilities at the nuclear reactor sites where it is generated in Ontario, Quebec and New Brunswick, and at AECL's nuclear research facilities in Manitoba and Ontario. Used nuclear fuel remains radioactive for a long period of time. Canada's

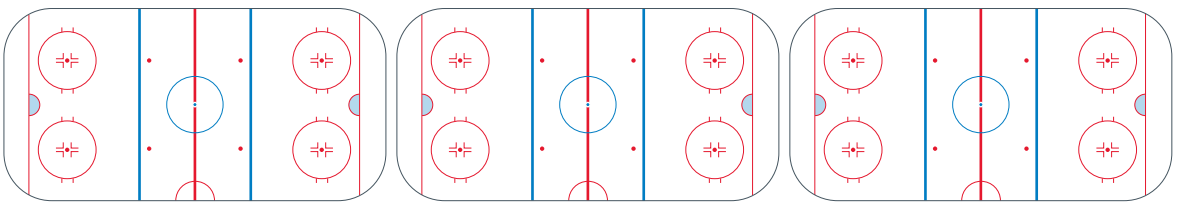
plan, Adaptive Phased Management, ensures that the material will be contained and isolated from people and the environment indefinitely.

The first milestone activity in implementing Adaptive Phased Management is the collaborative design of a process to select a site for a centralized deep geological repository. In 2009, the NWMO put forward a proposed site selection process for public comment and input. Only after the views that were heard have been fully considered will the process be finalized and the organization take the next step of welcoming expressions of interest from potential host communities.

Following identification of a site in an informed and willing community, we will conduct site characterization research and complete a detailed design and safety assessment for the repository. Construction will occur in a later phase and will take several years after a construction licence is obtained. An operating licence will be required before the facility is brought into service.

Based on the "producer pays" principle, the *NFWA* required the nuclear fuel waste owners – Ontario Power Generation (OPG), Hydro-Québec, NB Power and Atomic Energy of Canada Ltd. (AECL) – to establish segregated trust funds to finance the long-term management of their used fuel. These funds were established in 2002. Contributions are made annually by the waste owners, and audited financial statements are posted on the NWMO website at www.nwmo.ca/trustfunds. In 2008, as it was obliged to do by the legislation, the NWMO proposed a funding formula and deposits to be made each year by the waste owners to pay for APM implementation. The proposed formula was approved by the Minister of Natural Resources in April 2009.

The *NFWA* also required the NWMO to establish an Advisory Council whose independent comments on the organization's study, and triennial reports beginning with the 2010 Annual Report, are made public.



# Used Nuclear Fuel

**Canada has been generating electricity from nuclear power** for more than 40 years. In that time just over two million used fuel bundles have been produced. Each fuel bundle is about the size and shape of a fireplace log, weighing approximately 24 kg.

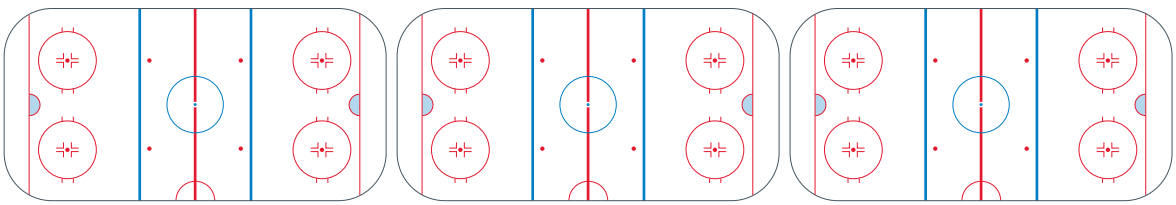
If the entire current inventory of used fuel bundles could be stacked like cordwood, they would fit into a space the size of six hockey rinks from the ice surface to the top of the boards.

After a fuel bundle is removed from a reactor, it is safely managed in facilities licensed for temporary storage at each reactor site. First, it is placed in a water-filled pool for seven to 10 years while its heat and radioactivity decrease. Afterwards, used fuel bundles are typically placed in dry storage containers, silos or vaults.

About 85,000 used nuclear fuel bundles are generated in Canada each year. Table 1 summarizes the current inventory of nuclear fuel waste in Canada as of June 30, 2009.

The inventory is expressed in terms of number of CANDU used fuel bundles and does not include fuel which is currently in the reactors, which is not considered to be “nuclear fuel waste” until it has been discharged from the reactors.

RIGHT: Each CANDU fuel bundle is about the size and shape of a fireplace log. If Canada’s entire current inventory of just over two million used fuel bundles could be stacked like cordwood, they would fit into six hockey rinks from the ice surface to the top of the boards.



## TABLE 1

**Summary of Nuclear Fuel Waste in Canada as of June 30, 2009**

| Location | Waste Owner | TOTAL (# bundles) | Current Status |
|---|---|---|---|
| Bruce A | OPG | 403,256 | • 2 units operational, 2 units under refurbishment (expected 2011 return to service) |
| Bruce B | OPG | 498,339 | • 4 units operational |
| Darlington | OPG | 356,504 | • 4 units operational |
| Douglas Point | AECL | 22,256 | • permanently shut down |
| Gentilly 1 | AECL | 3,213 | • permanently shut down |
| Gentilly 2 | HQ | 112,445 | • operational |
| Pickering A | OPG | 598,687 | • 2 units operational, 2 units permanently shut down |
| Pickering B | OPG | | • 4 units operational |
| Point Lepreau | NBPN | 121,758 | • currently undergoing refurbishment (expected 2011 return to service) |
| AECL Whiteshell | AECL | 2,268 | • permanently shut down *See Note (1)* |
| AECL Chalk River | AECL | 4,886 *See Note (2)* | • includes fuel from NPD (permanently shut down) and other CANDU reactors |
| TOTAL | | 2,123,612 | Total of: • 17 units in operation • 3 units under refurbishment • 6 units permanently shut down |

Notes: data as of June 30, 2009.
AECL = Atomic Energy of Canada Limited
OPG = Ontario Power Generation Inc.
HQ = Hydro-Québec
NBPN = New Brunswick Power Nuclear
NPD = Nuclear Power Demonstration

(1) 360 bundles of Whiteshell fuel are standard CANDU bundles. The remaining bundles are various research fuel bundles, similar in size and shape to standard CANDU bundles.
(2) In addition to the totals shown in Table 1, AECL also has some 21,987 items of research reactor fuels, experimental fuels and partial fuel elements in storage at Chalk River.

Assuming an average of 20 kg heavy metals in a fuel bundle, 2.1 million bundles is equivalent to 42,000 tonnes of heavy metal (t-HM).

# 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 NWMO is to develop and implement, 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 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 our actions.

**Transparency:** We will be open and transparent in our processes, communications and decision-making, so that the approach is clear to all Canadians.

# Chairman's Message

Canada's plan for the long-term management of used nuclear fuel is moving forward carefully and deliberately in collaboration with interested and potentially affected individuals and organizations. The past year saw new people become involved in our work and many of our ongoing relationships become stronger. Relationships and community partnerships will become increasingly important as our work proceeds.

**The Board of Directors was pleased with the support provided** by the NWMO Member companies. This allowed the organization to complete its work program while expanding and strengthening its capabilities to meet the implementation requirements of the future. We intend to continue growing the NWMO as it becomes necessary to do so in the coming months and years.

The Board was also pleased to learn in May that the Government of Canada approved the funding formula that the NWMO had proposed in its 2007 Annual Report, as required by the *Nuclear Fuel Waste Act*. The formula ensures that the money will be available when it is required to pay for the long-term used fuel management. Importantly, the NWMO is now reviewing and further developing the conceptual design for Adaptive Phased Management (APM) and expects to have updated cost estimates prepared by 2012.

In 2009 the NWMO continued to apply the best social and technical research available to ensure the success of the APM approach. The organization's most visible work was to test a proposed process for identifying an informed and willing community to host a deep geological repository. We received extensive public input and expect to release the finalized site selection process later this year, with opportunities for communities to learn more about the APM project.

"The NWMO is committed to moving forward with its mandate, collaboratively implementing Adaptive Phased Management in a manner that is socially acceptable, technically sound, environmentally responsible and economically feasible."

Our technical program has again received positive marks from the Independent Technical Review Group (ITRG) appointed by the Board in 2008 to regularly and independently scrutinize our technical work. The Board heard from the ITRG in November, and the NWMO has indicated it will act on each of the group's recommendations.

The Board values the contributions that the Elders Forum and its working group Niigani are making. We are thankful for their commitment and passion in assisting NWMO's understanding of Aboriginal peoples' views and values, thus enhancing our ability to work and consult effectively with Aboriginal communities in the future.

The Board also continues to benefit from the work of the Advisory Council in reviewing the NWMO's work, commenting on the work program and offering constructive advice on how the NWMO might better further its objectives.

Having now concluded a two-year public engagement program on the design of a fair, ethical and effective site selection process, we have reached an important milestone in the long-term management of Canada's used nuclear fuel. The NWMO is committed to moving forward with its mandate, collaboratively implementing Adaptive Phased Management in a manner that is socially acceptable, technically sound, environmentally responsible and economically feasible.

Dr. Gary Kugler
Chairman

ABOVE: Talking Circle at Elders Forum in Oromocto, New Brunswick.

# President's Message

2009 was a challenging and successful year for the Nuclear Waste Management Organization. We successfully evolved into a fully operational independent employer in our own right, and continued to make progress on our mandate of implementing Canada's plan for the long-term management of used nuclear fuel, while also delivering on our services agreement with Ontario Power Generation (OPG) to develop and license its proposed Deep Geological Repository for Low and Intermediate Level Waste in Kincardine, Ontario.

**Consistent with the strategic objectives** outlined in our Implementation Plan, we continued to build productive relationships with interested Canadians. Our Municipal Association Forum gained momentum, providing a valuable municipal perspective on our work and furthering our ability to communicate with communities. We continued our engagement of governments in the four nuclear provinces and regularly updated the Government of Canada on our work. As always, the Elders Forum, its working group Niigani and other Aboriginal leaders offered constructive counsel. And importantly, hundreds of Canadians participated in various engagement activities designed to test and improve the process we proposed for siting a repository for used nuclear fuel.

Our extensive multi-dimensional engagement program revealed general support for the proposed nine-step siting process and elicited a number of helpful suggestions for its enhancement. These activities generated many requests from groups and organizations to which the NWMO responded by providing information about Adaptive Phased Management and the proposed siting process. Throughout the collaboration, we obtained beneficial experience in dealing with questions on siting.

"The NWMO remains committed to fulfilling the expectations of Canadians that nuclear fuel waste be safely managed in a manner that meets or exceeds all applicable regulatory standards and requirements for protecting the health, safety and security of humans and the environment, now and in the long term."

Important milestones were also achieved in the technical development of a Deep Geological Repository for used nuclear fuel. We laid the groundwork to refine the conceptual design cost estimates and safety cases for the project. We agreed on plans with the Canadian Nuclear Safety Commission to define the scope and schedule for the regulator's pre-licensing reviews of our work. The Independent Technical Review Group, which reviews and comments annually on our scientific and technical approaches and methodologies, provided a positive report.

We are meeting the terms of our services agreement with OPG and are on track to deliver a licensing submission for the company's proposed Deep Geological Repository for Low and Intermediate Level Waste. Work at the site has further confirmed that Bruce County has excellent geology which will provide a high level of safety. The project continues to have solid support in Bruce County. Progress has been made with the Saugeen Ojibway Nation in the signing of a protocol agreement for their involvement in the Environmental Review of the project. Significant advances were also made in planning for the design and construction phases of work.

The NWMO continues to develop its capabilities. We added 36 new people with diverse skills and experience in 2009 to meet the demands of our work program and to provide for succession. Over the year we also completed 30 governing documents defining our key business processes as a step towards ISO 9001 certification. We expanded our relationships and collaborative work programs with universities and international parties to ensure the best science and approaches are applied.

The NWMO remains committed to fulfilling the expectations of Canadians that nuclear fuel waste be safely managed in a manner that meets or exceeds all applicable regulatory standards and requirements for protecting the health, safety and security of humans and the environment, now and in the long term.

Ken Nash
President

ABOVE: NWMO Board of Directors meets with senior staff.

# Our Work

The Nuclear Waste Management Organization (NWMO) is responsible for implementing Adaptive Phased Management – Canada's plan for the long-term care of used fuel produced by Canadian nuclear electricity generators. We are committed to carrying out our work collaboratively with interested and affected citizens and organizations in a manner that is socially acceptable, technically sound, environmentally responsible and economically feasible.

Our work in 2009 was guided by the seven strategic objectives previously identified and confirmed with Canadians. It is against these that we report on our activities for the year.

- Building Long-Term Relationships
- Advancing Research
- Providing Financial Surety
- Reviewing, Adjusting and Validating Plans
- Ensuring Good Governance, Oversight and Advice
- Building an Implementing Organization
- Collaboratively Designing a Siting Process

In addition to implementing Adaptive Phased Management, the NWMO has a services contract to develop and license a proposed Deep Geologic Repository for low and intermediate level waste owned by Ontario Power Generation. This work is also profiled in our Annual Report.

# 2009 – At a Glance

| | |
|---|---|
| **Building Relationships** | The NWMO broadened its engagement with all levels of government, continued working with the Aboriginal Elders Forum, Niigani and the Municipal Forum, and directly engaged more than 1,000 people about a site selection process for Adaptive Phased Management. |
| **Advancing Research** | The Independent Technical Review Group reported significant development in the NWMO's technical program and confirmed that the NWMO is covering a full range of relevant scientific topics. |
| **Financial Surety** | Canada's Minister of Natural Resources approved a funding formula proposed by the NWMO to ensure that those who benefit from nuclear energy pay for the management of used fuel and financial burdens are not passed to future generations. |
| **Reviewing Plans** | The NWMO published for public review a draft Implementation Plan for APM that charts the direction for 2010-2014. |
| **Governance** | The NWMO became an employer in its own right; as part of the plan to achieve ISO 9001 compliance, 30 policies, procedures and standards were implemented. |
| **Building the Organization** | The NWMO added 36 new staff members. The organization now employs 109 people with a wide range of skills and capabilities to meet a growing workload. |
| **Siting** | The NWMO published and engaged Canadians on a proposed process for identifying an informed and willing community to host a deep geological repository for Canada's used nuclear fuel. |
| **Additional Project** | The NWMO contracted with Ontario Power Generation to manage the regulatory approvals process for OPG's deep geologic repository for low and intermediate level waste. |

# Building Long-Term Relationships

**The NWMO is both an engagement and a research organization.** Public engagement helps determine what research is required. In turn, research informs the ongoing dialogue. Together, the two provide a foundation for building the long-term relationships required for implementing Adaptive Phased Management.

## BUILDING ON THE DIRECTION FROM CANADIANS: THE 2009 ENGAGEMENT PROGRAM

**The focus of the NWMO's 2009 public engagement program** was to invite review and discussion of a draft proposal for a site selection process. "Moving Forward Together: Designing the Process for Selecting a Site – Invitation to Review a Proposed Process for Selecting a Site" was published in May, and Canadians were invited to consider:

- The appropriateness of the proposed steps in the site selection process;
- The suggested principles to guide the process; and
- The proposed approach to engagement and capacity building for communities.

The engagement program was designed to actively seek the contributions of a diverse range of perspectives and provide an opportunity for all those who wished to participate.

## DESIGNING THE PROCESS FOR SELECTING A SITE – BROAD OUTREACH

**The NWMO completed an extensive public engagement program** in 2009 to collaboratively design the process that will be used to identify a safe and secure site in an informed and willing community to host Canada's long-term management facilities for used nuclear fuel. The dialogue began with publication of a proposed process in May and an invitation for all interested individuals and organizations to share their thoughts on whether the proposal is appropriate and what changes, if any, need to be made (*see Collaboratively Designing a Siting Process, page 53*).

A series of well-advertised Public Information Sessions were held in 17 regional centres in the four provinces involved in the nuclear fuel cycle. All interested Canadians were invited to learn more about the NWMO, the Adaptive Phased Management approach and the proposed siting process. NWMO staff members were present to answer questions, and hear concerns and comments from more than 700 visitors who attended the sessions. Participants represented many interests, including government at all levels, First Nations and Métis, environmental and conservation groups, educational organizations, business and industry, unions, social organizations, media, and members of the public. The range of views was broad. Many attendees expressed views on energy policy, while others offered specific recommendations on how the draft siting document could be enhanced.

Approximately 100 people representing business associations, municipal groups, non-governmental organizations, Aboriginal organizations, academia, the nuclear industry and professional associations participated in Multi-Party Dialogues convened in Saskatoon, Ottawa, Toronto and Saint John. Many who attended the day and a half long sessions had offered advice in 2008 on important principles and elements to be considered in drafting the proposed siting process. For the most part, they saw their guidance reflected in the draft document. While there was not always consensus, each of the dialogues yielded a number of suggestions for strengthening the process.

Citizen Panels, established in 2008 to review various aspects of the NWMO's work, were reconvened and brought together in Toronto and Ottawa for day-long deliberative dialogues to consider the siting proposal and comment on it. Participants expressed general support for the principles and steps in the proposed process and provided comments on possible areas for improvement. These facilitated full-day sessions included presentations by the Canadian Nuclear Safety Commission on Canada's nuclear regulatory framework. Similar half-day sessions with randomly recruited citizens active in their communities were held during October in five cities.

Other activities in support of the process to select a site included an e-dialogue moderated by Dr. Ann Dale of Royal Roads University in October, a national telephone survey of 2,600 Canadians and submissions received through the NWMO website.

Reports on all NWMO engagement activities are posted at www.nwmo.ca. The NWMO is reviewing all the comments it has received on the proposed siting process, and they will be taken into account as the organization refines and finalizes the document in 2010.

## MUNICIPAL ENGAGEMENT

**Adaptive Phased Management will be implemented** in an informed and willing community. Understanding local perspectives is critical for the NWMO as we design and refine our plans and processes. Significant progress is being made in this regard.

With the cooperation of municipal associations in nuclear provinces and the Federation of Canadian Municipalities (FCM), the NWMO has established a Municipal Forum. The Forum is an effective link to the municipal associations and their membership of hundreds of municipal governments.

The Municipal Forum met three times in 2009 providing us with helpful and informed insights into effectively communicating with local, rural and urban governments and communities. Members discussed NWMO processes and provided advice on our proposal for siting a deep geological repository. They also offered comment and guidance on the development of a research agenda that will yield tools to assist local governments considering locating a large, national infrastructure project in their communities.

In 2009, the NWMO expanded its interaction with local governments through participation in 14 municipally related conferences, including municipal and economic development associations, joint provincial-municipal assemblies and a national-level conference. We accepted invitations to speak at several of these meetings. At others we provided sponsorships and maintained information booths to inform delegates about the NWMO and APM. The NWMO also created a 'Learn More' program in 2009 to make available information and funding to assist communities, organizations and individuals to learn more about Adaptive Phased Management and Community Well-Being.


ABOVE: Pickering Nuclear Generation Station;
the NWMO responds to media inquiries and attends Public Information Sessions.


ABOVE: When used fuel bundles are removed from a nuclear reactor, they are first stored in pools for seven to 10 years; the NWMO engages Canadians on its proposed process for selecting a site for a Deep Geological Repository.

## FEDERAL AND PROVINCIAL GOVERNMENTS

**The NWMO continues to build relationships with representatives** of provincial and federal governments to foster greater understanding of our work, build trust and confidence in our processes and activities, and respond to questions about the implementation of Adaptive Phased Management.

APM touches on the mandates of many government departments, and our practice has been to identify a lead ministry in each province as our primary point of contact. We encourage coordination of engagement across relevant ministries and across various levels of management in the public service. We organize both bilateral and cross-ministry meetings to maximize linkages related to the long-term management of used nuclear fuel.

Over the course of 2009, we met with officials at the federal level and with key contacts in the four nuclear provinces. Specifically, we attended cross-departmental meetings with the Federal government, as well as each of the provincial governments prior to regional public information sessions held in each province. In Ontario, a senior-level forum has been established to facilitate the exchange of information across key ministries on an ongoing basis, and in 2009, it met three times with the NWMO.

At key points in our work, the NWMO also meets with elected representatives to provide current and relevant information about APM. In addition to elected officials from nuclear reactor communities, we conduct meetings with Ministers holding key portfolios, and we communicate with elected representatives who may have an interest in our project. In November, NWMO President Ken Nash made a presentation on APM implementation before the House of Commons Standing Committee on Natural Resources.

A Memorandum of Understanding (MOU) between Natural Resources Canada and the NWMO was signed in August. The MOU clarifies the roles and responsibilities of NRCan and the NWMO with respect to any obligation for consultations with Aboriginal people, pursuant to the Government's duty to consult and the NWMO's statutory obligations in relation to the *Nuclear Fuel Waste Act*.

In November 2009, the NWMO met with staff from the Canadian Nuclear Safety Commission (CNSC) to provide an annual update on the APM technical program. Topics addressed included developments in used fuel repository engineering designs, modelling glaciation events, and improving our understanding of geosphere stability and characteristics of sedimentary rock formations. A meeting also took place in November to discuss progress in updating the APM design and safety case, as well as the scope and schedule of a CNSC pre-licensing review of that work.

## ENGAGING ABORIGINAL PEOPLES

**The interests and concerns of Aboriginal peoples** are integral to the NMWO's work.

In 2009 the focus of our engagement was to seek input and advice on the *Proposed Process for Selecting a Site* and to further develop relationships with Aboriginal peoples in the nuclear fuel cycle provinces. We continued to receive counsel from the Elders Forum and Niigani, the Aboriginal Working Group. With their assistance, we drafted an Aboriginal Policy for comment, and continued exploring how Aboriginal Traditional Knowledge and western science might be interwoven throughout the implementation of Adaptive Phased Management.

Following the advice of Niigani to work as directly as possible at the community level while bringing people together on a regional basis, the NWMO invited Aboriginal organizations in Saskatchewan, Ontario, Quebec and New Brunswick to collaboratively design, develop and coordinate a series of regional information and dialogue sessions on the proposed siting process. The sessions, which brought together First Nations and Métis peoples in regional areas identified by Aboriginal organizations, reflected a broad range of perspectives including leadership, Elders, women, youth and community members.

The NWMO provided financial resources and communication materials about Adaptive Phased Management and the proposed siting process to support the dialogues, and the Assembly of First Nations provided additional information materials developed with the interests of First Nations people in mind. The dialogue format varied in each province. NWMO technical and engagement specialists participated in the sessions along with one or more members of Niigani and the Elders Forum. In addition, a number of Aboriginal groups conducted meetings and information sessions directly with Aboriginal communities in order to provide as wide a range of opportunities for participation and learning as possible. In total, more than 800 people participated.

Participants in the Aboriginal dialogues noted that in-depth information and a better understanding of the nuclear fuel cycle, nuclear energy production and the safety, security and impacts of a deep geological repository on future generations and the environment is needed for full participation in the site selection process.

Participants emphasized a need to better understand the proposed steps in the siting process. They spoke of the importance of Aboriginal perspectives in NWMO's work and the requirement for early involvement of Aboriginal peoples in the region of any potentially interested host community and the building of trust and relationships. The rights of Aboriginal peoples and the need for understanding Aboriginal culture, protocols and traditional practices were often cited along with the importance of Traditional Knowledge and the long-term sustainability of the environment and life. In all the dialogues, there was a desire to understand all components of nuclear energy production, including how other countries manage used nuclear fuel. Better understanding of the role of transportation communities in siting, the importance of the ongoing involvement of youth and the opportunity for Aboriginal communities to benefit from the project were also identified.

Reports on the dialogues in each region, including summaries of the input received, are available on the NWMO website.

## ELDERS FORUM/NIIGANI

**The Elders Forum met twice in 2009** – in Toronto in April, and in Oromocto, New Brunswick, in July. The focus of their deliberations was on dialogues with Aboriginal peoples regarding the proposed site selection process and on providing advice on the NWMO Aboriginal Policy.

Elders noted the NWMO's public recognition of the "seven generations" principle and of the importance of Treaty Principles and Traditional Knowledge. They acknowledged that there has been recognizable progress towards interweaving western science and Traditional Knowledge in the NWMO's work. They commended the NWMO's encouragement of youth involvement which recognizes the need for knowledge transfer between generations. They also said the serious nature of the NMWO's work will require ongoing efforts to involve Aboriginal peoples and building their capacity so that good decisions can be made.

The Elders asked Niigani to prepare a report on the work and advice provided to the NWMO by the Forum and Niigani as a record of their work for Aboriginal peoples in the future. The document will be made publicly available once completed.

Niigani convened six times, and once by conference call, over the year. They provided advice on establishing regional dialogues with Aboriginal organizations, the NMWO Aboriginal Policy, and agendas and planning for the Elders Forums, and assisted the NWMO throughout the year in various dialogues and meetings.

Over the course of the year, members of Niigani provided three Cultural Training sessions for the NWMO Board of Directors, the Advisory Council and NWMO staff.

## COMMUNICATION

**Effective communication with Aboriginal peoples** and communities requires culturally appropriate communication materials. In 2009, Niigani continued to publish a regular newsletter. The NWMO adapted an Aboriginal video about APM, producing it in eight languages used in the four nuclear provinces: Mi'kmaq, Maliseet, Innu, Swampy Cree, Ojibway, Oji-Cree, Woodland Cree and Dene.

## ABORIGINAL POLICY

**The NWMO is committed** to the active and meaningful participation of Aboriginal peoples in its work. In 2009, with the assistance of the Elders Forum and Niigani, and ongoing advice from national, provincial and regional Aboriginal organizations, we developed a draft Aboriginal Policy to guide our work. The proposed policy is posted on the NWMO website and is expected to be finalized and adopted in 2010 after the comments of interested people are reviewed and considered.

## DUTY TO CONSULT

**The roles of the federal Crown** and the NWMO with respect to consultations with Aboriginal peoples were clarified in 2009. In August, the federal government and the NWMO signed a Memorandum of Understanding.

Among other things, the agreement commits the NWMO to continue working with Aboriginal peoples and to keep the Crown informed of its engagement activities and advised of its proposed future activities. For its part, the Crown will monitor NWMO's engagement activities in relation to Aboriginal peoples and assess the need for any additional consultations that may be necessary to meet the Crown's duty to consult. The Government has a legal duty to consult with Aboriginal peoples and accommodate, if required, when an Aboriginal treaty or right may be adversely affected by conduct contemplated by the Government. In the NWMO's case, the Crown's duty is triggered by the need for regulatory approvals for a deep geological repository at an identified site.

The Memorandum of Understanding is posted on the NWMO website.


ABOVE: NWMO staff are encouraged and supported in their efforts to make a difference in their communities. For the second year, NWMO employees entered the Toronto YMCA Corporate Team Challenge to support the YMCA Strong Kids Campaign. 24 staff members on four running and two walking teams raised more than $2,000 through their participation.

## ENGAGING YOUTH

**Seeking recommendations** on how to make the issue of used nuclear fuel management resonate among young people and how to build their awareness of the organization's mandate, the NWMO turned in 2009 to the Youth Roundtable, convened the previous year.

Comprising 16 participants between 18 and 25 years old from the four nuclear provinces, the Roundtable is a culturally diverse group including young men and women from urban and rural communities. Members are at different life stages ranging from high school and university students to employed workers and people raising young families. They have an array of experiences from scientific and technical backgrounds, to interests in ethics, public policy, social sciences and community involvement.

The Roundtable presented its recommendations to management and the Advisory Council in May. Their advice on building interest and understanding addressed matters like key messages, communications channels, and engaging young people in the community and educational institutions. They also offered guidance on facilitating youth participation in the NWMO dialogues and how to involve them in decision-making processes.

The NWMO is developing an implementation plan in response to the recommendations and considering opportunities for further input from the Youth Roundtable in the design, review and implementation of future engagement initiatives.

## COMMUNITY INVESTMENT

**The NWMO initiated** a pilot corporate citizenship program for Adaptive Phased Management in 2009. The objective for our community-based investments is to foster opportunities for young people to participate in civic life and support them in making a positive difference by becoming involved in activities or issues that make meaningful contributions to their communities. This is anchored in the NWMO's commitment to dialogue, collaboration and engaged citizenship, ideals which are reflected in the NWMO's public engagement activities as well as its commitment to implement its work within a willing and informed host community.

The NWMO's contributions to 11 community initiatives were administered in partnership with the Community Foundations of Canada and were geographically focused in Ontario, New Brunswick, Quebec, and Saskatchewan.

# MILSET

ABOVE:
Team Canada named "Best Delegation" at MILSET Expo-Sciences International.

**At the national level, the NWMO sponsored 44 young people** to participate in the Team Canada delegation to MILSET Expo-Sciences International. The International Movement for Leisure Activities in Science and Technology (MILSET) is a non-governmental, non-profit and politically independent youth organization which aims to develop a scientific culture amongst youth by fostering networking and international collaboration.

Team Canada delegates were selected by their provincial youth science organizations, and their participation was led by Youth Science Canada, a national organization that promotes excellence in science and organizes an annual Canada-Wide Science Fair for youth. The NWMO's contribution allowed Youth Science Canada to expand the team significantly and include youth from Ontario, New Brunswick, Quebec and Saskatchewan.

At the closing of MILSET, Team Canada was given the "Best Delegation" award for the quality of their projects, team organization, spirit and overall contribution to the Expo. This is the only award given at this non-competitive event, and it is the first time that Team Canada has won.

## COMMUNICATION

**As the NWMO's engagement of Canadians unfolded** in 2009, our communications group enhanced our outreach to the public and key stakeholders.

The group organized a series of 17 regional public information sessions in the four nuclear provinces, developed communication materials to support the engagement program and attended most of the activities along with specialist staff to explain and respond to questions about the NWMO mandate, the APM approach and the proposed siting process.

Information materials developed and distributed to increase awareness and understanding of the organization and its work included: a video providing background about APM and an outline of the proposed process for selecting a site; multiple newsletters and discussion documents published on the website and mailed to subscribers; and background papers and fact sheets on frequently raised topics.

A new NWMO website with improved design, accessibility and functionality was unveiled in 2009. It was kept current throughout the year with regular updates on such things as NWMO activities, social and technical research reports, discussion documents, and minutes of Board and Advisory Council meetings.

Canadians also heard about Canada's plan for long-term used nuclear fuel management through extensive media reports which appeared in numerous English and French print, radio, television and web platforms, often in communities where engagement activities were underway, and on occasion, in national and international publications and broadcast outlets.

The NWMO maintained an information booth presence at a range of conferences and trade shows providing visitors with copies of the latest documents and reports, listening to their comments on our work, and responding to their concerns and questions.

We continued our efforts to expand our capacity to deliver more and better source information to the public by providing communications skills training to NWMO staff members who engage the public.

Throughout the year, the NWMO listened to the questions and comments of Canadians with a view to developing new communication materials to address issues about used nuclear fuel management that are important to people. A video on the safe transportation of used fuel was produced, and work was initiated on the development of a travelling exhibit to showcase Canada's plan for used fuel management in a manner that is accessible, interactive and visually stimulating.

# Advancing Research

**The NWMO's technical program** and social research are fundamental to the successful implementation of Adaptive Phased Management (APM). Canadians expect the approach that has been selected for the long-term management of used nuclear fuel to benefit from the most advanced scientific and social knowledge available, domestically and internationally. The organization makes a significant investment to ensure that the necessary resources are available for a robust and effective technical and social research program.

## TECHNICAL PROGRAM

**Used fuel repository engineering**, safety assessment and geosciences form the core of the NWMO technical program. Work in these areas supports implementation of APM and the collaborative design of a siting process for a deep geological repository.

In 2009 the NWMO initiated a project to update and refine the conceptual designs and safety cases for a used fuel deep geological repository looking at both crystalline and sedimentary rock. A review of transportation options for moving used fuel to a centralized facility was also initiated. As well, cost estimates for both the generic repository designs and possible transport systems are being updated. The conceptual designs and illustrative safety cases will be submitted to the Canadian Nuclear Safety Commission (CNSC) for pre-licensing review by 2012.

Other engineering activities in 2009 included further progress in understanding the structural behaviour of copper and steel used fuel containers under repository conditions over the very long term; identification of potential used fuel container placement options using thermal-mechanical analyses in the design and layout of a deep repository for consideration in crystalline rock and in sedimentary rock; and participation in the international shaft seal demonstration and monitoring project at the Underground Research Laboratory (URL) in Manitoba. In addition, a summary of Canadian and international experience in the transport of used nuclear fuel was completed. The review examined waste volumes transported annually, the types of packages used to transport used nuclear fuel and the regulatory tests that transportation packages must meet.

The focus of the repository safety program was to complete an assessment of the potential impact of glaciation on repository safety. An extensive set of calculations was completed. These results will be presented in technical reports and articles to be published in 2010.

The safety group also finished a three-year survey of biosphere transfer factors for key elements of interest as they apply to safety and for a variety of Canadian farm and wild game species. Work continued on developing a basis for estimating radionuclide solubilities under highly saline deep groundwater conditions which might exist in some potential repository sites. Through the NSERC/NWMO Industrial Chair in Used Fuel Disposal Chemistry at University of Western Ontario, studies continued on the important factors for uranium oxide fuel dissolution.

In geosciences the focus in 2009 was to develop readiness for the future assessment of potential candidate sites in communities willing to host a deep geological repository. The organization developed geoscientific site evaluation criteria for the proposed site selection process, compiled background information on the geology of the four nuclear provinces, and continued to refine various analytical and laboratory site characterization techniques and protocols for both sedimentary and crystalline rock. Researchers strived to further refine the NWMO's understanding of geosphere stability and its long-term resilience to external perturbations like those caused by seismic activity and climate change.

Other geoscience work, in collaboration with specialists and universities, addressed the development of seismic hazard assessment methods, the impact of glaciation on the performance of deep geological repositories and the long-term evolution of deep groundwater flow systems.

The NWMO continued to expand its relationships and collaborative work programs with universities to strengthen Canadian expertise in areas relevant to the development and safety of a deep repository. The NWMO provided research contracts and research grants to 10 Canadian universities, and as an approved industrial partner with the Natural Sciences and Engineering Research Council of Canada (NSERC), awarded three scholarships for Ph.D. students (*see sidebar*).

## NWMO/NSERC Industrial Postgraduate Scholarship

ABOVE: NWMO/NSERC Scholarship – Mike Makahnouk participates in Greenland Analogue Project.

**Mike Makahnouk, a Ph.D. candidate** at the University of Waterloo, was awarded a three-year Natural Sciences and Engineering Research Council of Canada (NSERC) Industrial Postgraduate Scholarship. Funded jointly by the NMWO and NSERC, Mr. Makahnouk's Ph.D. thesis involves field and analytical work to increase knowledge of the geochemical processes associated with glacial cycles and their impact on the long-term performance of a deep geological repository for used nuclear fuel. The work is being conducted as part of the Greenland Analogue Project – a collaboration between the NWMO and its Swedish and Finnish counterparts, SKB and Posiva. The project's 2009 field campaign included radar soundings to investigate local ice depths, installation of automated weather and GPS stations, drilling and instrumentation of two boreholes in the bedrock, and water sampling for geochemical analyses.

## INTERNATIONAL COLLABORATION

**International collaboration is key** to the advancement of the NWMO's technical work programs. Partnering with other national radioactive waste management organizations allows the NWMO to foster international cooperation on research, development and demonstration of technology, and to keep abreast of developments in repository design for various host rock formations.

The five-year Äspö Hard Rock Laboratory Agreement between the NWMO and the Swedish nuclear waste management agency, SKB, has been extended to June 2010 enabling the NWMO to continue its active participation in joint underground research and demonstration of repository technology in crystalline rock. Among projects the NWMO participated in with SKB at Äspö were the Task Force on Engineered Barrier Systems, the Long-Term Test of Buffer Material, and LASGIT, the gas injection test experiment. The NWMO also continued its participation in the Mont Terri Rock Laboratory, which is focused on studies of sedimentary rock.

The NMWO maintained its involvement in the Nuclear Energy Agency's Thermodynamic Database project which is developing a quality-assured database for key elements in radioactive waste management systems. We participated in BioProta, an international forum on biosphere modeling for radioactive waste facilities. In 2009, the NWMO contributed a review of selenium outgassing from soils, which is relevant to the long-term buildup of selenium in soils.

In May the NWMO co-hosted with the University of Western Ontario the International Spent Fuel Workshop held in Toronto, and participated in meetings including the Äspö Hard Rock Laboratory 16th Technical Evaluation Forum in Stockholm. Staff also took part in the Nuclear Energy Agency Reversibility and Retrievability Project Meeting in Paris in June.

## GEOSCIENCE SEMINAR

**The NWMO's 7th Annual Geoscience Seminar** took place in Orangeville, Ontario, in June. It brought together over 50 Canadian and international participants from universities, research organizations and consulting firms. Discussion over the two days focused on the NWMO geoscience work programs and addressed topics like long-term climate change, radionuclide transport processes, seismology, geosphere evolution, and techniques for matrix pore water extraction and analysis. The seminar brought together people with numerous areas of expertise and provided direction for future work to address challenging geosciences topics.

NWMO staff continued to acquire practical experience relevant to deep repositories through the NWMO's involvement in Ontario Power Generation's Deep Geologic Repository Project for Low and Intermediate Level Waste (*see page 59*).

ABOVE: NWMO annual geoscience seminar attracts scientists from across Canada and internationally.

## SOCIAL RESEARCH

**Canadians have told the NWMO** that APM must be implemented in a manner that is responsive to citizen expectations, priorities and concerns, even as these evolve over time. Listening to citizens and specialists to understand and respond to the issues and questions they raise requires processes and techniques that effectively engage interested people and organizations.

The focus of our social research in 2009 was to support dialogue to collaboratively design a process for siting a deep geological repository. As a complement to other engagement activities outlined in *Building Long-Term Relationships* (*page 19*), the NWMO undertook a nation-wide telephone survey. Conducted by the public opinion polling firm Pollara in October and November, the survey sought the views of more than 2,600 randomly selected Canadians. Questions were asked to test and refine key components of the *Proposed Process for Selecting a Site* (*see Collaboratively Designing a Siting Process, page 53*). The Pollara poll also included questions asked in previous surveys to track awareness on key variables related to the NWMO's work. Areas of focus included:

- National and community issues of importance
- Importance of and support for nuclear power for generating electricity
- Familiarity with the nuclear waste management process
- Awareness of and support for the NWMO
- Importance of possible principles to guide decision-making
- Importance of possible approaches to supporting communities that wish to consider hosting the project
- Approach to addressing concerns of other communities that may be affected

The full Pollara poll results are posted on the NWMO website at www.nwmo.ca.

In addition to polling, the NWMO received approximately 200 written comments on its siting document, in the form of submissions, letters, Contact Us messages through the website, surveys completed on the website and workbooks returned. We received two petitions signed by approximately 60 people indicating they do not want the APM project sited in their community.

The Social Research group worked closely with the Municipal Forum to identify and explore research topics of mutual interest. At the request of Forum members, a project was launched to review, update and provide information about the potential economic effects of APM for a host community, its surrounding area, economic region and province. This work is published on the NWMO website. Work is continuing to explore and anticipate the broad range of potential effects, both positive and negative, associated with the APM project.

As part of the NWMO's Learn More program, individuals and groups were invited to help shape discussion on the core concept of community well-being. A research proposal was accepted, and the report is published on the NWMO website.

The NWMO continues to learn from and be a partner in the development of the Canadian Business Ethics Research Network (CBERN). The network aims to promote knowledge-sharing and partnerships within the field of business ethics and across private, governmental, voluntary and academic sectors. CBERN is well-established within Canada and is making significant strides in raising the profile of Canadian research internationally. It has developed regional hubs in the Atlantic Provinces (Halifax), the Prairie Provinces (Calgary) and the Pacific Region (Vancouver).

CBERN has active clusters of researchers and practitioners working on business ethics and resource extraction, socially responsible investment, and business and human rights. A fourth cluster is currently developing around work in business and spirituality. CBERN also partners with several international organizations, including the International Society of Business, Economics, and Ethics (ISBEE), and a global online library is being developed.

The NWMO continues its participation in the Forum on Stakeholder Confidence, a collaborative working group of the Organisation for Economic Co-operation and Development (OECD), an intergovernmental organization of industrialized countries, based in Paris. A focus of this group is sharing knowledge and experience in different countries regarding effective approaches for engaging citizens in nuclear waste management decision-making, and addressing the priorities and concerns of citizens in the development of policies, plans and facilities.

# Ethical Framework – Reflection on Performance

**The NWMO continues its efforts** to integrate ethical values and principles into the development of individual policies, plans and operations as it proceeds to implement Adaptive Phased Management. Over 2009, these efforts have been focused on the development of a fair, ethical and effective process for selecting a site in an informed, willing host community.

1. The NWMO has committed to respecting five core values in all its activities, including the design and development of the siting process, with a view to ensuring that it carries out its mandate in an ethically responsible manner. These values are integrity, excellence, engagement, accountability and transparency.

2. The NWMO began the design of the process for selecting a site with a commitment to a set of principles and objectives that reflected the direction from Canadians who participated in dialogues during the study phase of work, as well as the framework developed by NWMO's Roundtable on Ethics. These principles and objectives include respect for life in all its forms; respect for future generations; respect for people and cultures; justice across groups, regions and generations; fairness to everyone affected and particularly to minorities and marginalized groups; and sensitivity to the differences of values and interpretations that different individuals and groups bring.

3. The NWMO brought greater clarity to how these principles would be applied to the siting process through dialogue with a cross-section of citizens. Key commitments designed to help ensure that the process of selecting a site is guided by high ethical standards include a central focus on safety; seeking an informed and willing "host community"; focusing the search for a site on the provinces involved in the nuclear fuel cycle; the right to withdraw by communities that engage in the siting process; respect for Aboriginal rights and treaties; collaboration and inclusiveness in decision-making; informing the process with the best available knowledge and expertise; and fostering the long-term well-being of the host community.

4. The NWMO has sought to engage those with an interest to help design the process for selecting a site for the deep geological repository, in addition to ensuring that a broad diversity of perspectives are included and considered. Importantly, the engagement program included an invitation to focus on the ethical values that should guide the site selection process. The engagement program was the subject of an independent audit which concluded, "the APM 2009 Engagement Program in its entirety has been effective in meeting the stated program purposes, project objectives, and demonstrating transparency and inclusiveness."

5. The NWMO designed and implemented a communications strategy that used a broad range of tools, including a website, videos, reports and advertising, designed to facilitate access to information that will support informed public engagement, and provide the foundations for informed public evaluation of its work.

6. The NWMO has sought to engage Aboriginal peoples in shaping a strategy and setting out the values that should guide the NWMO's work, including design of a siting process. Over the course of the year, Aboriginal organizations in the four nuclear fuel cycle provinces and their members were engaged in dialogue, as was the Elders Forum and their working group, Niigani. The Elders Forum and Niigani provide ongoing assistance and advice which help to guide and structure the NWMO's engagement with Canada's Aboriginal peoples.

ABOVE: The NMWO is committed to the respectful engagement of Aboriginal peoples and to learning about Aboriginal Traditional Knowledge.

## TRADITIONAL KNOWLEDGE AND WESTERN SCIENCE

**The NWMO continues its work** through periodic workshops and with the guidance of the Elders Forum to explore interweaving Traditional Knowledge and western science as they apply to our activities. We are building our capacity to engage in discussions with Traditional Knowledge holders and working to ensure that the processes and plans we develop encourage such discussions as critical input to decision-making.

The 2009 workshop invited individuals with practical project experience in interweaving Traditional Knowledge and western science to meet with NWMO staff. Over the course of a day-long discussion, these individuals were asked to share their personal experience in siting and implementing large development projects as well as their insight on evolving best practices and approaches. Highlights from the session are published on the NWMO website.

# Providing Financial Surety

**The *Nuclear Fuel Waste Act* (*NFWA*)** specifically addresses the future financial obligations for managing used nuclear fuel over the long term. The legislation requires the establishment of trust funds by each waste owner. The funds were established in 2002, and annual contributions have been made by each waste owner since. The total value of these funds, including investment income, was approximately $1.8 billion as of the end of 2009. This money is in addition to other segregated funds and financial guarantees the companies have set aside for nuclear waste management and decommissioning.

| Owner | Trust Fund Balance ($ million) December 2009 |
|---|---|
| Ontario Power Generation | 1,693 |
| Hydro-Québec | 60 |
| NB Power Nuclear | 66 |
| Atomic Energy of Canada Ltd. | 30 |
| Total | 1,849 |

Experience in other countries has demonstrated the importance of safeguarding these funds so that they will be preserved for the intended purpose. The *NFWA* built in explicit provisions to ensure that the trust funds are maintained securely and used only for the intended purpose. The NWMO may have access to these funds only for the purpose of implementing the management approach selected by the Government once a construction or operating licence has been issued under the *Nuclear Safety and Control Act* (*NSCA*).

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

As required by the *NFWA*, the NWMO makes public the audited financial statements of the trust funds when they are provided by the financial institutions annually. They are posted at www.nwmo.ca/trustfunds.

In addition, the NWMO is required to provide a range of financial information in each of its annual reports following the Government's decision, as defined in Subsection 16(2) of the *NFWA*.

## **FINANCIAL GUARANTEES** As Required by *NFWA* Section 16(2)(a)

**As specified in the *NFWA*,** this report provides the form and amount of the financial guarantees that all NWMO members – Ontario Power Generation Inc. (OPG), Hydro-Québec (HQ) and NB Power Nuclear (NBPN) have provided to the Canadian Nuclear Safety Commission (CNSC). These guarantees for the year 2010 total $12 billion and equal the total cost (in present value terms) of managing the decommissioning of all reactors and permanently managing all nuclear waste (including used nuclear fuel) produced to date. A large portion of these guarantees, approximately $11 billion (at year end 2009), exist in segregated funds dedicated to nuclear waste management and decommissioning with the remainder in the form of Provincial Guarantees.

Details of the status of these guarantees are presented in *Attachment 1*.

## **TOTAL COST ESTIMATE** As Required by *NFWA* Section 16(2)(b)

**The *NFWA* requires the NWMO** to address the cost and funding of the long-term management of used nuclear fuel. In its 2005 final study report, the NWMO estimated the cost of APM to be in the range of $5 to $6 billion (stated in present value as of January 1, 2004) assuming 3.6 million used fuel bundles are produced over the life of Canada's nuclear reactors. When updated to January 1, 2010, present value, the estimated cost of APM is in the range of $7 to $8 billion. These cost estimates include costs for reactor site storage which are carried out and funded by the individual waste owners, and costs to develop, construct and operate a central long-term facility, including a deep geological repository and transportation for the used nuclear fuel to the repository, which are carried out and funded by the NWMO.

The next generation of baseline cost estimates is expected to be completed no later than the year 2012. In addition to a regular baseline cost estimates update on a five-year cycle, the NWMO is committed to providing annual assessments on all factors that impact these cost estimates. Any material change in the estimated cost estimates will be dealt with and disclosed in the NWMO's Annual Report.

The highest present value cost scenario for long-term management of Canada's used nuclear fuel assumes a deep geological repository would be available starting in 2035.

**For the purpose of determining** the funding requirements for the long-term management of used fuel, the cost estimate is further segregated into two parts:

1. The cost of developing and building a repository, transporting the used fuel and operating the repository in 2035 for the estimated 2.1 million fuel bundles produced as of the end of June 2009 would be approximately $5.2 billion (stated in present value as of January 1, 2010). This amount represents the "committed" portion of the total cost of the long-term management of used fuel already generated. The costs of interim storage at the reactor sites and recovery of the used fuel from storage are not included since they are the responsibility of the waste owners.

2. The incremental cost of fuel bundles generated after June 30, 2009, including the transport to the repository, facility expansion and additional costs are identified as the "future" portion of the total cost of the long-term management of used fuel. These costs will be dependent on future production levels.

## **BUDGET FORECAST FOR 2010** As Required by the *NFWA* Section 16(2)(c)

**In addition to making financial provision** for work required post-construction licence, the NWMO will incur costs of approximately $1.7 billion (as stated in present value as of January 1, 2010) to site the long-term management option, develop its detailed design, evaluate its environmental impacts and obtain a construction licence from the CNSC. For 2010, the NWMO Board of Directors approved a budget envelope of $38.8 million. Annual costs beyond 2010 are subject to further review. Sharing of these costs will be in accordance with the percentages defined in the funding formula.

## **FUNDING FORMULA** As Required by *NFWA* Section 16(2)(d)

**In accordance with the requirements** under the *NFWA*, the NWMO proposed a funding formula to address the future financial costs of implementing the Adaptive Phased Management (APM) approach in its 2007 Annual Report following the Government's selection of the APM approach for the long-term management of used fuel in June 2007. The funding formula, based partly on projections of used fuel to be generated by each waste owner, allocates liabilities to each of the corporations for their portion of the estimated total cost. It identifies trust fund contributions by each nuclear waste owner for their portion of the estimated total cost. The funding formula was approved by the Minister of Natural Resources in April 2009. The five-year used fuel production for each waste owner is shown in Table 1.

**TABLE 1**

**Used Fuel Bundle Production (Historical and Forecast)**

| | June 2006 | 2007* | 2008* | 2009* | 2010* | 2011* |
|---|---|---|---|---|---|---|
| Owner | Inventory | Actual | Actual | Actual | Projection | |
| OPG | 1,640,481 | 71,104 | 71,673 | 73,528 | 79,053 | 82,549 |
| HQ | 101,130 | 4,651 | 2,800 | 3,864 | 4,300 | 4,500 |
| NBPN | 109,298 | 4,668 | 7,792 | - | - | 1,120 |
| AECL | 32,623** | - | - | - | - | - |
| Total | 1,883,532 | 80,423 | 82,265 | 77,392 | 83,353 | 88,169 |

*from July 1 (previous year) to June 30 (current year)
**updated by AECL in 2008

**The approved funding formula** was developed in order to fairly share cost among existing nuclear fleet owners and is not directly applicable in a situation where new reactors are added. In the Minister's letter to the NWMO approving the funding formula in April 2009, a specific request was made for the NWMO to take into consideration how it might adjust the funding formula to accommodate potential new build nuclear in Canada and to report on progress to date.

The NWMO has begun a process of engagement by contacting existing and potential new owners and a number of provincial governments to solicit their views on the development of a funding formula that could apply to used fuel from new reactors.

## 2009 TRUST FUND CONTRIBUTIONS

**For the 2009 fiscal year,** the four corporations made contributions to their respective trust funds in the amounts indicated below:

| | |
|---|---|
| Ontario Power Generation Inc. | $ 153,245,296 |
| Hydro-Québec | $ 8,496,311 |
| NB Power Nuclear | $ 14,040,611 |
| Atomic Energy of Canada Limited | $ 1,746,645 |

The 2009 *NFWA* Trust Fund contributions consist of two portions: A reconciliation of the 2008 contributions and the 2009 portion calculated based on the approved funding formula. A reconciliation to the 2008 contributions is required to account for the difference between the contribution requirements calculated based on the funding formula and those set out in s.10(1)(a) in the *NFWA*.

## TRUST FUND DEPOSITS FOR 2010 As Required by *NFWA* Section 16(2)(e)

**The *NFWA* Trust Fund deposit** for 2010 and beyond stated herein have been developed based on the approved funding formula. Under this funding formula, the funding for the post-construction licence costs is divided into two parts:

1. Cost associated with used fuel already produced (Committed Liability)
2. Cost associated with used fuel to be produced (Future Liability)

### Committed Liability

**The committed portion of the funding requirement** represents all costs that will be incurred regardless of whether any further used fuel bundles are generated in the future. This liability includes all fixed costs for the facility and variable costs attributed to used fuel bundles in inventory up to June 30, 2009.

Contributions for the “committed” liability are to be amortized to year 2035 in equal present value payments. The rationale for this amortization period is that 2035 is consistent with the planned end of life of the current nuclear reactors that created the 2.1 million used fuel bundles and it is consistent with the earliest planned date when the deep geological repository would be available. This funding method has the advantage of distributing the funding obligations evenly to each year taking into account the time value of money.

The contribution amounts required to fund the committed liability are shown in Table 2. Projected deposits are also shown for subsequent years. These amounts have been calculated based on the actual year-end balance of the trust funds (*Table 4*) established by each waste owner. As at the end of 2009, the total balance of the trust funds amounted to $1.8 billion. The 2008 financial market volatility had little negative impact on the trust funds due to the conservative portfolios they hold.

**TABLE 2**

**Contributions to Trust Funds for "Committed" Fuel Bundle Liability**

| | Deposits to Trust Fund – "Committed" Bundles ($ million) | |
|---|---|---|
| Owner | 2010 | 2011 |
| OPG | 63 | 66 |
| HQ | 4 | 4 |
| NBPN | 4 | 5 |
| AECL | 2 | 2 |
| Total | 73 | 77 |

## Future Liability

**This liability represents the incremental cost** of transferring to the repository, facility expansion, and additional operating and monitoring costs of any future bundles produced beyond June 30, 2009. Each future used fuel bundle would incur the same cost in present value terms taking into account the time value of money.

The projected waste owner contributions to trust funds for the liability associated with the future used fuel bundles to be generated beyond June 30, 2009, are shown in Table 3. Actual contributions by the waste owners for future used fuel bundles will depend on the actual number of used fuel bundles generated annually by the individual waste owners.

**TABLE 3**

**Contributions for Future Fuel Bundle Liability**

| | Projected Deposits to Trust Fund – Future Bundles ($ million) | |
|---|---|---|
| Owner | 2010 | 2011 |
| OPG | 73 | 83 |
| HQ | 3 | 3 |
| NBPN | 0 | 0 |
| AECL | 0 | 0 |
| Total | 76 | 86 |

Table 4 summarizes the total expected contributions from 2009 to 2011.

**TABLE 4**

**Total Trust Fund Deposits: Year 2010 to 2011**

| | Trust Fund Balance ($ million) | Deposits to Trust Funds (Committed and Future Bundles) ($ million) | |
|---|---|---|---|
| Owner | Dec. 2009 | 2010* | 2011 |
| OPG | 1,693 | 136 | 149 |
| HQ | 60 | 7 | 7 |
| NBPN | 66 | 4 | 5 |
| AECL | 30 | 2 | 2 |
| Total | 1,849 | 149 | 163 |

*Annual trust fund deposits are required to be made within 30 days of the submission of the Annual Report. Table 4 assumes a deposit date of April 30 for illustrative purposes.

The *NFWA* specifies that annual trust fund deposits are due within 30 days of the issuance of the NWMO Annual Report.

The deposits to trust funds represent the total contribution towards the committed liability (fixed costs plus variable cost for bundles already generated) and the projected contribution towards future bundles. The total deposits to trust funds of $149 million in 2010 rising to $163 million in 2011 compares to $110 million annually, as legislated in the *NFWA* prior to the approval of the funding formula by the Minister of Natural Resources.

## ATTACHMENT 1

**Financial Guarantee Status – NWMO Members**

## ONTARIO POWER GENERATION INC.

Effective July 31, 2003, OPG provided the Canadian Nuclear Safety Commission (CNSC) with a *Decommissioning Financial Guarantee* that included a guarantee associated with the long-term management of used fuel arising from the operation of OPG-owned nuclear stations and waste management facilities, including those leased by Bruce Power. The *Decommissioning Financial Guarantee* also covers liabilities associated with long-term management of low and intermediate level waste, as well as plant decommissioning.

Development and maintenance of the Financial Guarantee considers the following points:

- The Financial Guarantee covers the liability based on projected waste arising to year end in any given year. As a result, the value of the used fuel Financial Guarantee changes annually to recognize the incremental cost associated with additional used fuel generated during that year.
- The initial Financial Guarantee submission covered the five-year period to year end 2007. It was updated annually by means of an Annual Report provided to the CNSC.
- The Financial Guarantee is satisfied in part by the actual accumulation of funds within both a Used Fuel Fund and a Decommissioning Fund under the *Ontario Nuclear Funds Agreement* (*ONFA*) between OPG and the Province of Ontario. This value is supplemented by a Provincial Guarantee which is executed between the Province of Ontario and the CNSC.
- The *NFWA* Trust Fund forms part of the Used Fuel Fund under *ONFA*.

The *Provincial Guarantee Agreement* provides an unconditional and irrevocable guarantee to supplement monies set aside by OPG in segregated funds including the *NFWA* Trust Fund to satisfy the total Financial Guarantee required by the CNSC.

OPG submitted documents to the CNSC in 2007 to support its application to update the Financial Guarantee for the period from January 1, 2008, to year end 2012. The CNSC Hearing for this application was held in November 2007. The CNSC accepted the Financial Guarantee proposal on November 29, 2007.

The Annual Report to the CNSC for year 2010 shows a Financial Guarantee requirement of $11.337 billion. This will be satisfied by a segregated fund balance at year end 2009 of $10.246 billion and a Provincial Guarantee of $1.545 billion. The Provincial Guarantee value has been accepted by the CNSC at a fixed amount that will cover all remaining years until 2012.

The value of the Ontario Power Generation *Nuclear Fuel Waste Act* Trust Fund as of year end 2009 is $1.693 billion. This value forms part of the segregated fund balance shown above.

## HYDRO-QUÉBEC

**Hydro-Québec has provided** the CNSC with a *Decommissioning Financial Guarantee* of $685 million stated in present value as of December 31, 2011, that includes a guarantee associated with used fuel arising from the operation of Gentilly-2 until 2011, and the cost of station decommissioning including the long-term management of low and intermediate level radioactive waste.

- The total guarantee is made up of $402 million for decommissioning and long-term management of low and intermediate level radioactive waste and $283 million for used fuel.
- The guarantee is in the form of an expressed commitment of the Province of Quebec to Hydro-Québec, which provides a guarantee of payment and the Hydro-Québec *Nuclear Fuel Waste Act* Trust Fund.
- The Hydro-Québec *Nuclear Fuel Waste Act* Trust Fund contained $60 million as of December 31, 2009.

## NB POWER NUCLEAR

**NB Power Nuclear has provided** the CNSC with a *Decommissioning Financial Guarantee* that includes costs associated with the long-term management of used fuel projected to be produced from the Point Lepreau Generating Station, and the cost of station decommissioning including the long-term management of low and intermediate level radioactive waste.

- The current used fuel financial guarantee is based on the present value of future costs to manage used fuel produced to the end of 2010. The fund will be increased annually based on future used fuel production estimates.
- The financial guarantee requirement is satisfied by three separate funds: a used fuel fund, a station decommissioning fund and the *Nuclear Fuel Waste Act* Trust Fund
- The total market value of the funds at December 31, 2009, was approximately $453 million and was comprised of the following:
  - Used fuel fund – $242 million
  - Station decommissioning fund – $145 million
  - *Nuclear Fuel Waste Act* Trust Fund – $66 million

## ATOMIC ENERGY OF CANADA LIMITED

**The AECL financial guarantee** is in the form of an expressed commitment by the Government of Canada to the CNSC. No specific dollar values are quoted in the commitment letter.

The AECL *Nuclear Fuel Waste Act* Trust Fund contained about $30 million as of December 31, 2009.

# Reviewing, Adjusting and Validating Plans

**Canadians have identified adaptability** as a vital requirement for any long-term used nuclear fuel management plan. They have also expressed a need for interested and potentially affected individuals and organizations to be informed of changes in the energy landscape and engaged in the development of implementation plans to respond to these evolving realities.

An important strength of the Adaptive Phased Management (APM) approach is that it maintains the option to adjust course and be responsive to new information or changing circumstances. The NWMO has established a process for monitoring, reviewing and reporting developments in societal expectations, energy policy and technology that could impact long-term used nuclear fuel management. Our rolling five-year implementation plans are living documents that reflect an ever-changing environment.

## IMPLEMENTATION PLAN

**In November 2009,** the NWMO published its updated draft Implementation Plan for the years 2010 to 2014. The plan reconfirms and demonstrates the NWMO's commitment to engaging and collaborating with Canadians in defining how we go forward. It was widely distributed by mail and posted on the NWMO website with an invitation for public input.

In the early years of implementing APM, NWMO plans have been guided by a foundation of seven Strategic Objectives confirmed with Canadians in the period after the Government of Canada selected an approach for long-term used nuclear fuel management. In 2009, work began to update these objectives to reflect the next stage of implementation after a site selection process has been finalized.

The addition of an objective specific to the generic design and safety case for a deep geological repository reflects progress and the importance of this work. Changes to the governance objective reflect the maturity of the organization.

The 2010-2014 Implementation Plan will be finalized early in 2010 after all the comments and suggestions received have been considered.

## SOCIETAL EXPECTATIONS

**Throughout all its engagement activities** in 2009, the NWMO listened to Canadians to confirm the continued social acceptability of the Adaptive Phased Management approach. We used a variety of engagement techniques to help ensure that a diversity of perspectives was heard. All the comments received will be taken into account and considered in the development of future Implementation Plans.

The collaborative development of the proposal for a siting process was a two-year dialogue with Canadians that continued throughout 2009. When the siting process is finalized in 2010, the NMWO will report on how all the input it received is dispositioned.

## ENERGY POLICY

**Plans in Canada for new nuclear reactors** and reactor life extensions are evolving. Decisions about new reactor technology, or whether new units will be built, have not been made.

Over the year many Canadians, particularly among those who attended engagement activities on the proposed siting process, raised questions about energy policy and how it might evolve over time. Many provided their views on how APM should be adapted in response to current and projected used fuel inventories.

The NWMO completed an update on current and potential future inventories of used fuel volumes and types, and posted it on the website. The report includes a discussion of the implications from potential new and refurbished nuclear generation plants in the implementation of APM.

## TECHNOLOGICAL DEVELOPMENTS

**For the second year,** the NWMO has published on its website a report on reprocessing, partitioning and transmutation, and other technologies for the long-term management of used nuclear fuel. This is in keeping with a commitment the organization made in its 2005 Final Study Report to keep a "watching brief" on technological developments in the field of long-term used nuclear fuel management. In assessing the feasibility of reprocessing CANDU fuels, the authors concluded that it would be "prohibitively expensive" and would require decades of research to prove its feasibility.

# Ensuring Good Governance, Oversight and Advice

**The NWMO is committed** to developing and maintaining a governance structure that provides Canadians with assurance of the high quality of our work. The organization is subject to the requirements of the *Nuclear Fuel Waste Act* and oversight by the Minister of Natural Resources. In the future, the NWMO's activities will also be subject to oversight through the *Nuclear Safety and Control Act* and the *Canadian Environmental Assessment Act*.

## QUALITY MANAGEMENT

**In 2009 the NWMO continued to develop** and implement the organization's management system based on the ISO 9001:2008 Quality Management Systems standard. As part of the plan to achieve ISO 9001 compliance, 30 policies, procedures and standards were prepared and implemented over the course of the year, and an audit of the management system to assess conformance with the ISO 9001 management system standard was completed.

Some of the more important procedures established in 2009 included safety assessment and analysis, design management, engagement and dialogue, and control of release of product and service. Since the NWMO is responsible to ultimately provide Canadians with a safe deep geological repository, the procedures for completing safety assessments and managing design work are critical to the organization. The procedure for the control and release of product and service documents the steps that the NMWO takes to ensure any products or services it provides are of high quality.

Work will continue in 2010 to adjust the organization's management system as necessary, and complete the external audit to achieve compliance and certification to the ISO 9001:2008 Quality Management System requirements.

## REGULATORY UPDATE

**Although the NWMO will not enter** into a formal regulatory process until after a preferred site for a deep geological repository has been identified, the organization will be seeking regulatory guidance and oversight early in the siting process to ensure that its work is consistent with the expectations of the Canadian Nuclear Safety Commission (CNSC). In March 2009 the NWMO formally established a special project arrangement with the CNSC to facilitate pre-licensing involvement of the regulator in reviewing pertinent project documentation for alignment with regulatory expectations and informing the public about the regulator's role in the project.

Examples of early involvement of the CNSC expected during critical stages of the siting process are preliminary reviews and feedback on preliminary designs and safety assessments; preliminary review of site characterization plans and

methods that will be used by the NWMO to assess the suitability of potential candidate sites; and community briefings and public awareness activities by the CNSC to explain the Canadian regulatory process.

Active discussion is underway with the CNSC about pre-licensing reviews of conceptual designs and illustrative safety assessments for a used fuel repository for both crystalline and sedimentary rock. The NWMO expects to obtain CNSC agreement on a mutually acceptable review process in 2010. The objective is to obtain a statement from regulatory staff, on completion of their review, confirming that at an early stage and at an overall level, the conceptual designs for Adaptive Phased Management and the illustrative post-closure safety assessments meet the long-term safety requirements for a deep geological repository for used fuel, in accordance with Regulatory Guide G-320 on *Assessing the Long-Term Safety of Radioactive Waste Management*.

## TECHNICAL REVIEW

**The NWMO Board of Directors** established an Independent Technical Review Group (ITRG) to provide ongoing review of the organization's technical research program. Through experience acquired in Canada, the U.K., Sweden and Switzerland, the four current members have extensive internationally recognized expertise in technologies associated with implementing nuclear waste repository projects.

The ITRG's mandate is to inform the Board and the Advisory Council on whether the NWMO technical program is based on credible scientific and technical approaches and methodologies, is consistent with international practices, broadens and advances the NWMO's technical knowledge to adequately support implementation of Adaptive Phased Management, and has sufficient resources to achieve its mission.

The ITRG convened in Toronto over two days in September 2009 to conduct its second review. Its discussions focused on the NWMO's current work program following on the recommendations of the first ITRG report in 2008, and on the organization's five-year plan for technical program activities. In November, the ITRG presented its findings to the NWMO Board of Directors and Advisory Council.

The independent reviewers noted significant development in the NWMO's technical program since 2008 and indicated that the NWMO is covering a full range of scientific and technical topics that are relevant to the current stage of implementation of the Adaptive Phased Management (APM) approach. The report identified a few areas where there is a need for greater clarity on the objectives of the technical program activities and made a number of recommendations.

The NWMO has reviewed, considered and accepted the ITRG's 12 recommendations, and in all cases, work has been initiated, or plans have been defined, to address the recommendations.

The ITRG 2009 report and the NWMO response to it are posted on the NWMO website at www.nwmo.ca/itrg.

# Building an Implementing Organization

**Effective January 1, 2009,** the Nuclear Waste Management Organization (NWMO) became its own employer with all the necessary supporting infrastructure. Having grown from a small study-based organization established in 2002 to a sustainable corporation with full responsibility for implementing Adaptive Phased Management (APM), the NWMO now counts well over 100 employees and is growing. The move to full independence enhances the NWMO's long-term viability and improves its capacity to recruit and retain personnel.

An agreement struck between the NWMO and Ontario Power Generation (OPG) saw the transfer to the NWMO of all OPG personnel who had been working on NWMO programs and on OPG's proposed deep geologic repository for low and intermediate level nuclear waste. The move has provided the NWMO with the experience base of an established nuclear waste management and repository team. Another substantial benefit was a services agreement that came with the transfer.

The contract calls for the NWMO to develop and license OPG's proposed repository project for low and intermediate level waste in Kincardine, Ontario. As a result, the NWMO is gaining first-hand experience in relationship-building with a host community and licensing a repository through the regulatory system. Working on design, development, safety assessment, environmental assessment and construction of a deep repository is increasing the NWMO's organizational capacity to implement APM.

The organization is making sure that it has the necessary personnel to carry out its expanding work program. In 2009, following a national newspaper advertising campaign, more than a dozen specialized professionals were hired in the areas of geoscience, safety assessment, repository engineering and regulatory affairs, bringing with them extensive experience in the nuclear and mining industries. Our workforce was also reinforced with the addition of specialists in the fields of social research, Aboriginal engagement, new media, finance, human resources and law. Staffing capabilities will continue to be increased, as needed, consistent with growth in the work program.

The NWMO will continue its recruitment campaign to ensure continued growth in key skill areas. We have established new employee orientation and staff training programs as well as annual performance review programs, and efforts are being made to involve many of the organization's younger generation employees in public engagement activities. A succession planning committee has been formed, and succession plans have been developed to ensure a sustainable senior management team is in place for the future.

In August we acquired additional office space to accommodate our growing workforce.

# Collaboratively Designing a Siting Process

**The NWMO is committed** to developing the process for selecting a site for a deep geological repository collaboratively with interested Canadians. The organization published a proposal for a siting process in May 2009 based on dialogue the previous year about important principles and elements for a fair process that would help ensure the selection of a safe, secure site in an informed and willing host community.

Canadians were invited to consider the proposed process and to share their thoughts on whether it is appropriate and what changes, if any, need to be made. A discussion document to initiate and facilitate conversations, *Moving Forward Together: Designing the Process for Selecting a Site*, was widely distributed and was the basis for our engagement throughout the year.

In addition to the discussion document, a broad range of information materials was prepared to support dialogue. These included a brochure on the proposed process, a video providing background to the discussion and highlighting some key issues to be addressed, a travelling poster display, a workbook outlining key components of the proposed process and inviting comment, a series of backgrounders and fact sheets on commonly asked questions and topics, and a set of NWMO presentations designed to invite input on the process. An information video in eight Aboriginal languages was also produced. All this material is posted on the NWMO website.

In addition to a general invitation to participate through web-based opportunities or to make a submission, several specific engagement initiatives, focused in the four nuclear provinces, were conducted as part of the collaborative design process. Many of the activities were planned and conducted by independent contractors and summarized in reports prepared by these individuals and firms. They are described in the *Building Long-Term Relationships* section of this report on page 19.

The independent reports, and other comments and suggestions submitted directly to the NWMO at each stage of the process, can be reviewed on the NWMO website. All this input is being taken into consideration as the NWMO refines and finalizes the siting process, which is expected to be released in 2010.

# NWMO's Two-Year Collaborative Development of a Process to Select a Site – 2008 and 2009

## KEY QUESTIONS TO SPARK DISCUSSION

### 2008 Dialogue
### INPUT TO THE DESIGN OF THE SITING PROCESS

1. Does the framework of objectives, ethical principles and requirements provide a sound foundation for designing the process for selecting a site?
2. How can we ensure that the process for selecting a site is fair?
3. From what models and experience should we draw in designing the process?
4. Who should be involved in the process for selecting a site, and what should be their role?
5. What information and tools do you think would facilitate your participation?

### 2009 Dialogue
### APPROPRIATENESS OF PROPOSED PROCESS FOR SELECTING A SITE

1. Are the proposed siting principles fair and appropriate?
2. Are the proposed decision-making steps consistent with selecting a safe site and making a fair decision?
3. Does the proposed process provide for the kinds of information and tools that are needed to support the participation of communities that may be interested?
4. What else needs to be considered?

## WHAT WE HEARD

**Throughout our discussions,** participants underlined important principles. They continued to emphasize that the current generation must put a plan in place for the waste we have created, and that this is the foundation for proceeding with the siting process. People talked about the importance of continuing efforts to build awareness, understanding and confidence in Adaptive Phased Management, including how used nuclear fuel will be safely transported from reactor sites to the central facility.

The value of continuing to build our understanding and maintain flexibility to take advantage of new knowledge and expertise from around the world throughout the process is crucial, said participants. Safety, security and protection of people and the environment in the siting decision are preeminent considerations. The "social contract" with future generations, ensuring the protection of present and future generations, must lead the process.

People emphasized the importance of a strong set of principles to guide the siting process. They said these must reflect the values and priorities of citizens and ensure that shared decision-making, inclusiveness, transparency and independent review drive the process. Robust public participation is essential. It is the heart and soul of a successful site selection process. Third-party involvement throughout is also of utmost importance.

The NWMO was reminded of its responsibility to involve those that are potentially affected in decision-making, and ensuring they have the resources they need to support their participation. This is considered crucial to a fair process.

Seeking an informed and willing community to host the project is a key requirement. Participants were adamant that those most affected by the project must be truly willing to host it. It is vital that the long-term well-being, or quality of life, of the site community is fostered through the project. The community must benefit from hosting the site, and risks must be mitigated.

A number of changes to the proposed siting process were suggested. The NWMO will take these into account as work continues to finalize a fair and appropriate process for identifying a host community.

During October and November, Pollara conducted a national survey of 2,600 people on behalf of the NWMO. The results suggest that the proposed principles to guide the siting process reflect a common-ground consensus among Canadians. Asked to rate the importance of each principle on a scale of one to seven, respondents provided the following views:

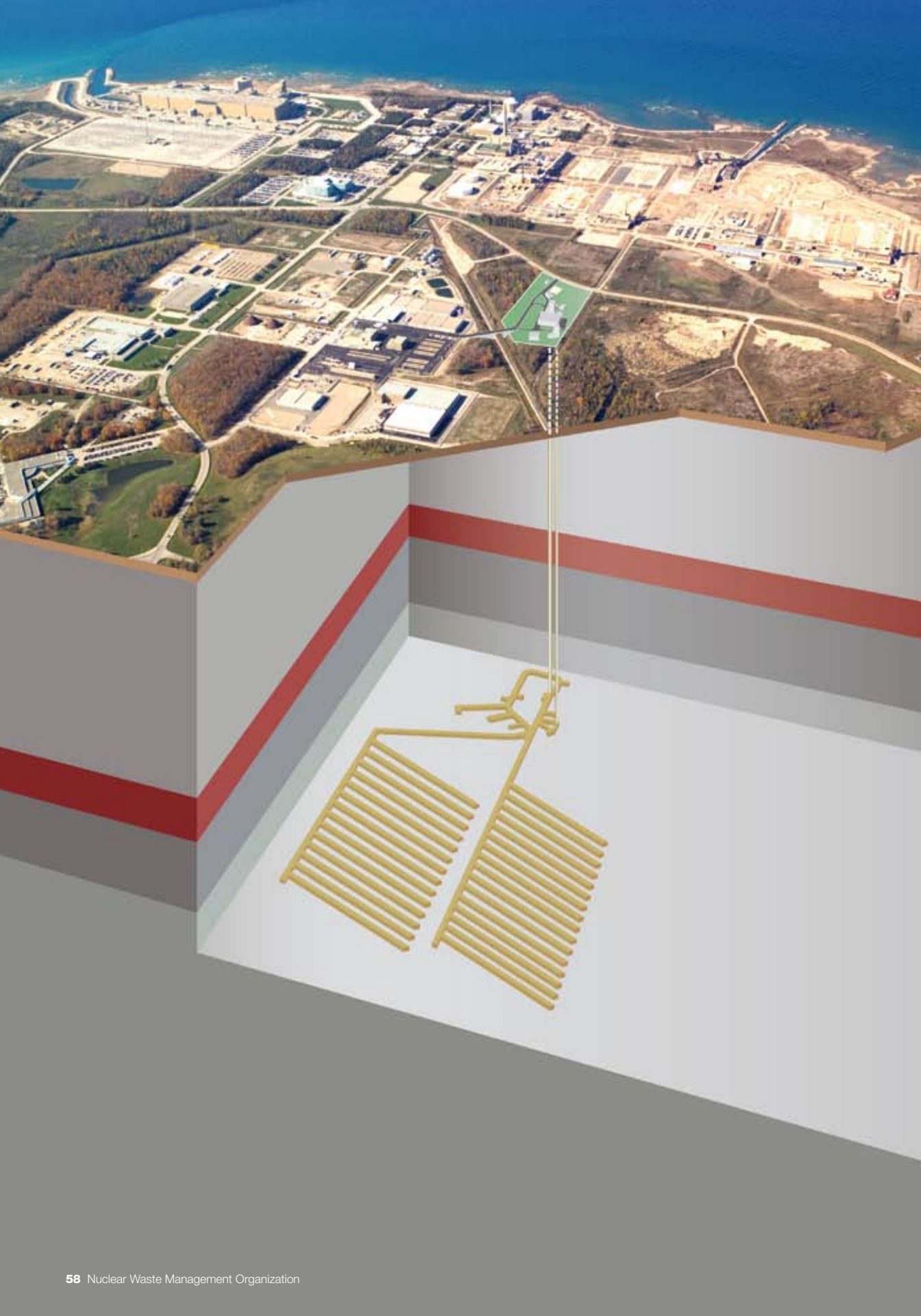
| It is important that… | % who rate the principle 6 or 7 on a 7-point importance scale |
|---|---|
| Safety, security and protection are central to the process | 95 |
| The community is informed about the risks and benefits | 92 |
| Construction does not start until after a regulatory review | 92 |
| The safety of the project has been confirmed by independent review | 85 |
| The community is willing to accept the project | 78 |
| The community is involved in each key decision | 75 |
| The project ensures the community benefits from it over a long period | 74 |
| The best information is used throughout the process | 72 |
| The views of surrounding communities are addressed | 71 |
| The process respects Aboriginal rights and treaties | 69 |
| Communities are able to withdraw until late into the process | 54 |
| The process focuses on the nuclear provinces | 47 |

The NWMO is committed to ensuring that both the development of the site selection process and the process itself are judged to be inclusive, fair and transparent. The organization is now reviewing the comments, concerns and ideas of everyone who participated in its 2009 engagement on the proposed siting process. Siting will not begin until after all views are taken into consideration and the process is finalized.

# Site Selection Process

**The NWMO has made four important commitments** as to how a site selection process must work:

1. The decision by a community to host the site must be informed and made willingly.
2. The site selected must meet strict, scientifically determined safety requirements.
3. In the interest of fairness, engagement should focus on the provinces directly involved in the nuclear fuel cycle: New Brunswick, Quebec, Ontario and Saskatchewan.
4. Communities that decide to engage in the process for selecting a site, as potential hosts, shall have the right to withdraw consistent with any agreements between themselves and the NWMO.



# OPG's Deep Geologic Repository Project for Low and Intermediate Level Waste

## BACKGROUND

**On January 1, 2009,** Ontario Power Generation (OPG) contracted the NWMO to manage the regulatory approvals process for its Deep Geologic Repository (DGR) Project for the long-term management of low and intermediate level radioactive waste. The project began in 2001 when the Municipality of Kincardine approached OPG to enter into a Memorandum of Understanding to assess the feasibility of the long-term management of the low and intermediate level waste at the Bruce nuclear site.

The DGR is proposed to be located approximately 680 metres below ground in low permeability limestone, beneath a 200-metre-thick layer of low permeability shale. These sedimentary bedrock formations provide multiple natural barriers which will safely contain and isolate the radioactive waste for many thousands of years and beyond.

The DGR will be located adjacent to OPG's Western Waste Management Facility (WWMF) in Kincardine, Ontario. It would manage about 160,000 cubic metres of low and intermediate level waste. Used fuel will not be stored in this DGR.

OPG's WWMF currently manages and provides interim storage for the low and intermediate level waste that is received from OPG's Pickering and Darlington nuclear stations and the Bruce Power stations. In 2009, ongoing DGR project activities conducted in support of the regulatory approvals process for a DGR site preparation and construction licence included geoscientific site characterization, safety assessment, facility engineering design, environmental studies and community engagement.

## REGULATORY APPROVAL PROCESS

**In January 2009,** the Canadian Nuclear Safety Commission and Canadian Environmental Assessment Agency released final guidelines for the DGR Environmental Impact Statement (EIS) and the Joint Review Panel (JRP) Agreement. The EIS guidelines identify the information needed to examine the potential environmental effects of the proposed project and list requirements for a licence to prepare the site and construct the DGR.

The current schedule calls for the EIS to be submitted to the JRP in early 2011. The Panel will hold a public hearing, likely in 2012, where stakeholders will have the opportunity to present feedback.

Pending licensing approval, construction of the DGR would commence in 2013, and it would become operational in the 2018 timeframe.

ABOVE: Conducting a breeding bird survey as part of the baseline field studies for OPG's Deep Geologic Repository project.

## GEOSCIENTIFIC SITE CHARACTERIZATION

**Geoscientific site characterization activities** have entered their final phase as part of the step-wise four-year program to assess and confirm the suitability of the site to safely host the DGR.

During 2009, two inclined boreholes were substantially drilled to provide detailed information on the bedrock structure at the site. The data collected complement extensive data collected from vertical boreholes drilled in 2007 and 2008, and provide a 3-dimensional understanding of the geologic conditions and properties at the site. Documentation of all the site characterization activities that have occurred at the site is currently underway.

Multi-level monitoring systems were installed to provide long-term monitoring capability. These measurements provide key information to determine the capability of the DGR site to safely isolate the waste for a long period of time.

## SAFETY ASSESSMENT

**In 2009, pre-closure and post-closure updated** safety assessment reports were completed. These analyses, using interim data and design information, examined potential future impacts of the facility. The results indicate that the DGR site will safely contain and isolate the waste. The next and final version of these reports will be incorporated in the final regulatory approvals submission.

## DESIGN OF THE DGR

**The design of the DGR facility** has continued to evolve. A change made in 2009 was the realignment of underground emplacement rooms so that rooms within each of the two panels are now parallel to each other. This new underground layout is better suited to rock conditions that are expected to exist deep underground.

In 2009, the NWMO established the Technical Review Group (TRG) to review and to provide expert opinion on the DGR design and construction of the facility. The TRG is comprised of independent technical experts who collectively have extensive experience in the fields of deep underground mine construction, mine ventilation, mine hoisting, tunneling, geomechanics and radioactive waste material handling.

## ENVIRONMENTAL STUDIES

**Collection of data to describe the baseline** environment began in 2007 and continued in 2009. Field work was undertaken to update the information previously compiled on surface water quality, aquatic and terrestrial species populations, social and economic conditions, and public attitude. These data provide the starting point from which the potential effects of the DGR project on the environment, including the physical, cultural, social and economic components, are being assessed.

## COMMUNITY ENGAGEMENT

**In 2009, DGR communication activities** included issuing DGR project newsletters and other publications, a new DGR website, speaking engagements, Open Houses, briefings to key stakeholders and attendance at public events. The DGR mobile exhibit was present at local community events more than 40 days. Staff made more than 45 presentations on the project.

In September the NWMO, in conjunction with OPG, undertook a series of engagement activities in Michigan to provide key politicians, officials and environmental groups with information on the DGR.

Engagement activities continued with Saugeen Ojibway Nation (SON), with a protocol completed in March, including SON, OPG and the NWMO as signatories. Discussions continue with SON, as well as with the Métis Nation of Ontario (MNO) and the Historic Saugeen Métis.

A comprehensive Annual Report on the DGR project is being published separately.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# The Organization

The Members: The Nuclear Waste Management Organization was established in 2002 by Canada's nuclear electricity generators following passage by the federal government of the *Nuclear Fuel Waste Act* (*NFWA*). Ontario Power Generation Inc., New Brunswick Power Corporation and Hydro-Québec are the founding Members, and along with Atomic Energy of Canada Ltd., are required to fund the NWMO's operations.

**The Member corporations develop** the underlying governance structures for the organization and also the cost-sharing provisions for the NWMO's operating expenses.

The Members convened their Annual General meeting in Montreal in June 2009 where they received a report from the Board of Directors on the NWMO's activities for the year, and they were updated on the development of the NWMO's draft site selection process. Members also discussed opportunities for waste owner cooperation on low and intermediate level waste in Canada. They appointed Deloitte & Touche LLP as the external auditor for the purposes of the 2009 audit.

# Board of Directors

**The Board of Directors** is responsible for oversight of the organization and taking a leadership role in the development of the corporation's strategic direction.

As of December 31, 2009, the Board was composed of nine directors. Dr. Gary Kugler serves as Chairman, and Mr. Ken Nash is President & CEO. Others appointed by Ontario Power Generation are Mr. C. Ian Ross, Mr. Ron Jamieson, Dr. Deborah Poff, Mr. Pierre Charlebois and Mr. Donn Hanbidge. Ms. Josée Pilon is appointed by Hydro-Québec, and Ms. Sharon MacFarlane serves on behalf of NB Power Nuclear.

The Board of Directors convened five formal meetings and one conference call in 2009. In addition, the three Committees of the Board met a total of 13 times during the year. Early in the year, the Board reviewed the 2008 Annual Report and approved the audited financial statements, which were subsequently presented to the NWMO Members at the June Annual General Meeting.

The 2010-2014 NWMO Business Plan and Budget were presented to the Board for discussion and approval in the fall of 2009. Directors also held preliminary planning discussions for preparation of the NWMO's first triennial report due in 2011.

Other Board of Directors activities in 2009 included:

- ongoing review and discussion of the NWMO's plans regarding the design of the site selection process, and review of the outcomes of the related public engagement activities;
- meeting with the Associate Deputy Minister of Natural Resources Canada to discuss the NWMO's plans for siting;
- ongoing discussions and review of the NWMO's business risks;
- meeting with Dr. Michael Binder, President of the Canadian Nuclear Safety Commission, to receive a briefing on the work of the CNSC and its involvement in the NWMO's work;
- a review of the annual report of the Independent Technical Review Group (ITRG);
- director education including discussion on key governance issues for directors;
- ongoing discussions on how the funding formula might be adjusted for new build nuclear;
- direction for the NWMO's role in the design and construction phase of OPG's low and intermediate level waste repository; and
- Aboriginal Cultural Training with Niigani in November 2009.

The Board of Directors directs that minutes of its meetings be posted on the NWMO's website at www.nwmo.ca/boardminutes.

## COMMITTEES OF THE BOARD OF DIRECTORS

### AUDIT, FINANCE AND RISK COMMITTEE

The Audit, Finance and Risk Committee convened five regular meetings in 2009. The Committee arranged for the external audit of the NWMO's 2008 financial statements, meeting with the auditors to discuss their findings, and advising on selection of the auditors for 2009 and terms of the audit service plan. The Committee spent additional time reviewing an expanded audit scope for 2009 as a result of the NWMO's implementation of new financial systems, the addition of payroll and an expanded organization. The Committee regularly reviewed the in-year financial statements and reported to the Board.

Other activities during the year included:

- Regular reviews of:
  - business risk;
  - the Chair's and President's expenses;
  - the NWMO's financial policies;
  - the NWMO's financial reports and business plan progress;
  - plans to update the reference plans for the *Ontario Nuclear Funds Agreement*; and
  - pension plan performance and developments.
- Selection of an investment manager for the NWMO Pension Plan; and
- Review of implementation of service agreements with OPG.

As of December 31, 2009, there were four directors on the Audit, Finance and Risk Committee:

- Ian Ross, Chair
- Ron Jamieson
- Josée Pilon
- Donn Hanbidge

### SITING COMMITTEE

The Siting Committee convened four regular meetings in 2009.

Activities of the committee during the year included:

- review of the development of the draft siting proposal;
- review of the engagement program for the draft siting proposal;
- extensive review of results of engagement program activities; and
- planning for initiation of the site selection process following finalization of the process.

As of December 31, 2009, there were four directors on the Siting Committee:

- Ron Jamieson, Chair
- Deborah Poff
- Sharon MacFarlane
- Pierre Charlebois

### HUMAN RESOURCES AND COMPENSATION COMMITTEE

The Human Resources and Compensation Committee was established in April 2008 to provide oversight of the NWMO's human resources functions, including compensation practices, human resources policy, organization design, labour relations and pension plans. The Committee convened four regular meetings in 2009.

As of December 31, 2009, there were four directors on the Human Resources and Compensation Committee:

- Ian Ross, Chair
- Pierre Charlebois
- Josée Pilon
- Deborah Poff

# Members of the Board of Directors

**Dr. Gary Kugler – Chair**
Dr. Gary Kugler is the retired Senior Vice-President of Nuclear Products and Services at Atomic Energy of Canada Limited (AECL), where he was responsible for AECL's commercial operations. During his 34 years with AECL, he held various technical, project management, business development and executive positions. Prior to joining AECL, he served as a pilot in the Canadian Air Force. Dr. Kugler is a graduate of the Institute of Corporate Directors' Director Education Program and also serves on the Board of Ontario Power Generation. He holds an Honours B.Sc. Physics and a Ph.D. in Nuclear Physics from McMaster University.

**Ken Nash – President and CEO of the NWMO**
Ken Nash is a founding director of the NWMO and the immediate past chair of the organization's Board of Directors. He has held a number of senior management positions at Ontario Hydro and Ontario Power Generation in the areas of finance, engineering and environmental management, and most recently was Senior Vice-President of the Nuclear Waste Management Division. He is also past chair of EDRAM, an association of waste management organizations from 10 countries, including Canada.

**Pierre Charlebois**
Pierre Charlebois is the retired Executive Vice-President and Chief Operating Officer at Ontario Power Generation (OPG) and was responsible for the operation of OPG's nuclear, hydro and fossil businesses. From December 2003 to November 2006, Mr. Charlebois served as Chief Nuclear Officer, responsible for overseeing OPG's nuclear generation business and its performance. Mr. Charlebois graduated from Ottawa University in 1975 with a bachelor's degree in Applied Science. He is a member of the Professional Engineers of Ontario.

**Donn Hanbidge**
Donn Hanbidge is the Chief Financial Officer at Ontario Power Generation (OPG). He was appointed to his current position in 2005 and is responsible for providing financial leadership and operational support to OPG's business units. He has overall accountability for the controllership function, risk management, accounting, reporting, taxation, business and investment planning, treasury, pension, financial communications, and nuclear fund management. Prior to joining OPG, Mr. Hanbidge held various financial management roles with Union Gas Limited. He began his career at Ernst & Young. Mr. Hanbidge obtained an Honours Bachelor of Arts in Business Administration from the University of Western Ontario and is a Chartered Accountant.

**Ronald (Ron) L. Jamieson**
Ron Jamieson is a member of the Board of Directors of the Ontario Power Authority. Prior to his retirement in late 2005, he served as Senior Vice-President of Aboriginal Banking at BMO Financial Group. Mr. Jamieson has held several senior executive positions in the financial services industry. Throughout his career, he has also been active in economic development initiatives for Aboriginal communities across Canada. Mr. Jamieson also served as chairman, president and CEO of Ontario Energy Corporation, whose mandate was to invest or participate in energy projects throughout Canada.

**Sharon MacFarlane**
Sharon MacFarlane has been Vice-President of Finance and Chief Financial Officer at NB Power since 2003. Ms. MacFarlane joined NB Power in 1997 as Managing Director of Finance and became Vice-President of Finance and Information Systems one year later. Prior to 1997, she was Vice-President of Finance and Administration at Mount Allison University. Ms. MacFarlane is a graduate of the University of New Brunswick and holds a Chartered Accountant designation.

**Josée Pilon**
Josée Pilon is an MBA graduate of Laval University. She is member of the steering committee on the evaluation project for the rehabilitation of Gentilly-2. As a special projects manager, she is responsible for evaluating business opportunities for new sources of energy from the private sector, including wind power, biomass and hydroelectric. She is also involved on the financial impact evaluation of new hydroelectric projects on municipalities. Prior to her current position, she held numerous business development positions in international projects.

**Dr. Deborah C. Poff**
Dr. Deborah Poff holds the position of President and Vice-Chancellor at Brandon University in Manitoba. Previously Dr. Poff was a Professor of Philosophy and Political Science at the University of Northern British Columbia (UNBC). From 1994 to 2004, she was Vice-President and Provost at UNBC. In 2004, she was awarded a Fellowship in Public Policy with the Sheldon Chumir Foundation for Ethics in Leadership. She is the founder and editor of the Journal of Business Ethics, Teaching Business Ethics and Journal of Academic Ethics. She is the editor of Business Ethics in Canada and the section editor on business and economic ethics on the forthcoming Encyclopedia of Applied Ethics to be published by Elsevier Press. Dr. Poff is currently working on a book on ethical leadership and the future of university governance. She is currently the President of the National Council on Ethics in Human Research.

**C. Ian Ross**
Ian Ross served at the Richard Ivey School of Business at the University of Western Ontario from 1997 to 2003. Most recently, he was Senior Director, Administration in the Dean's Office, and was also Executive in Residence for the School's Institute for Entrepreneurship, Innovation and Growth. He has served as Governor, President and CEO of Ortech Corporation; Chairman, President and CEO of Provincial Papers Inc.; and President and CEO of Paperboard Industries Corp. Mr. Ross currently serves as a director for a number of corporations, including Ontario Power Generation, and is Chair of GrowthWorks Canadian Fund Ltd. He is also a member of the Law Society of Upper Canada.

# Officers

Chairman of the Board
**Dr. Gary Kugler**

President and CEO
**Kenneth E. Nash**

Vice-Presidents
**Angelo Castellan** – Environmental Assessment & Corporate Support
**Steve Cavan** – Treasurer & Chief Financial Officer
**Frank King** – Chief Engineer
**Patrick Moran** – General Counsel and Corporate Secretary
**Sean O'Dwyer** – Human Resources
**Ian Pritchard** – Design & Construction
**Kathryn Shaver** – APM Engagement & Site Selection

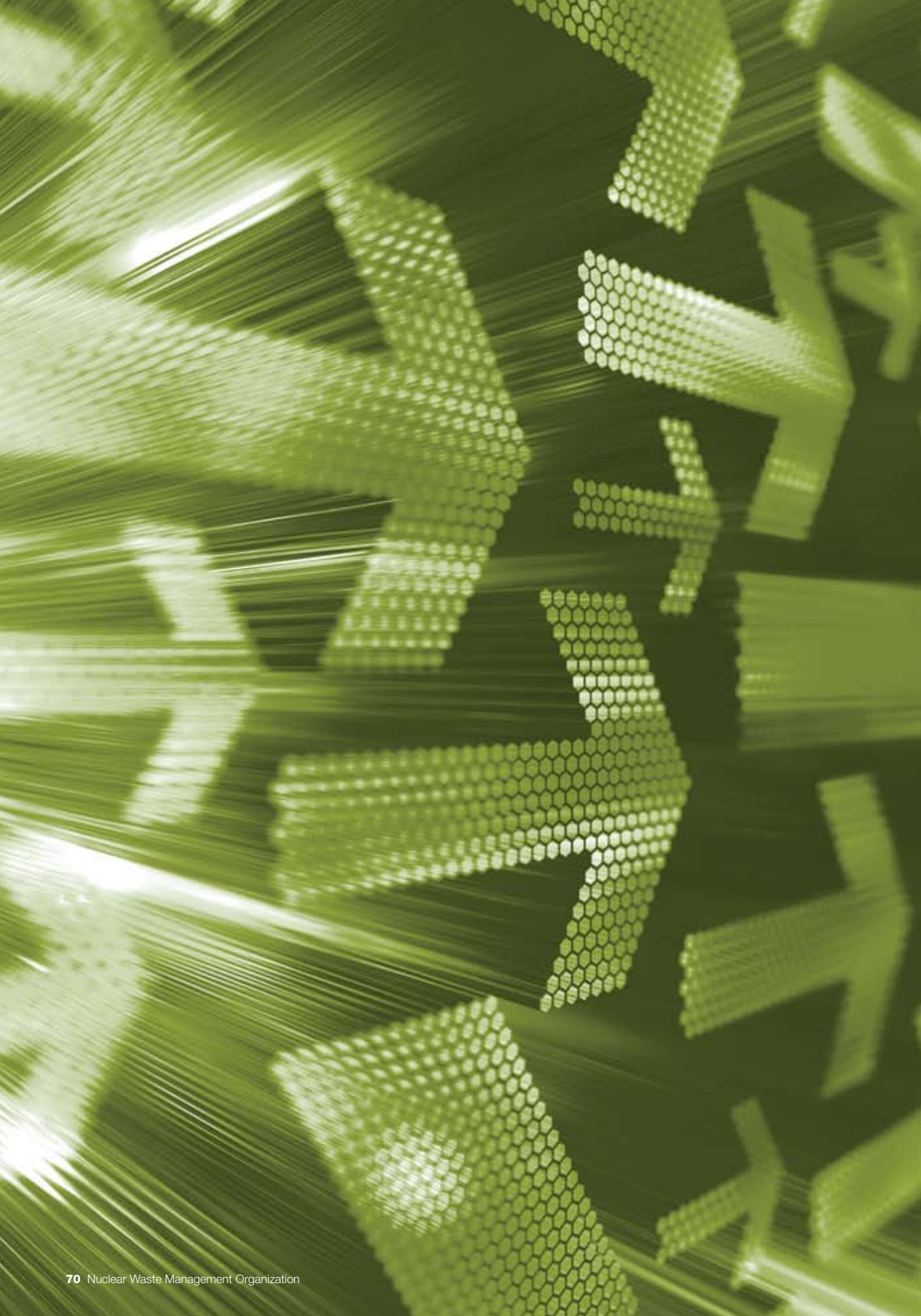
# The NWMO Team

**As at December 31, 2009,** the NWMO had 109 full-time staff. The organization grew during the year from 81 individuals at the end of December 2008. Added capabilities are primarily in the areas of social and technical research, and public engagement.

The NWMO will continue to expand its internal capacity in 2010, expecting to reach a complement of 128 to meet the needs of its evolving workload.

### OUR HEAD OFFICE

**The head office of the NWMO is located at:**
22 St. Clair Avenue East, 6th Floor
Toronto, Ontario M4T 2S3
Canada



# Advisory Council

As required by the *Nuclear Fuel Waste Act* (*NFWA*), the NWMO Board of Directors established an Advisory Council in 2002. In 2009 the Advisory Council comprised 10 members, including seven of the original members and three members appointed in 2008. The Honourable David Crombie continued to serve as Chair. The full Advisory Council membership is profiled on pages 76–78.

## STATUTORY REPORTING REQUIREMENTS

**The Advisory Council is required** by the *NFWA* to comment every three years on the previous three years of NWMO activity. These independent statements, which include observations on the results of NWMO public consultations and analysis of any significant socio-economic effects of the organization's activities, are to be published in the NWMO's triennial reports beginning with the 2010 report. The Council is also obliged to comment on the organization's five-year strategic plans and budget forecasts. Advisory Council comments are submitted to the Minister of Natural Resources and made public at the same time.

## ONGOING ADVICE TO THE NWMO

**In addition to fulfilling its legislated reporting** requirements, the Advisory Council outlines its activities on a yearly basis for inclusion in the NWMO Annual Report. The Council meets regularly with the NWMO, following closely the development of the organization's plans and activities, and providing ongoing counsel and advice.

**Dr. Daniel Rozon**
In September 2009, the NWMO and the Advisory Council were deeply saddened by the death of Dr. Daniel Rozon, a long-time member of the Council. A specialist in reactor physics, Dr. Rozon was Professor Emeritus in the Engineering Physics Department at the École Polytechnique de Montréal. His active participation and significant contributions to the deliberations of the Advisory Council are greatly appreciated and will be exceedingly missed.

## COUNCIL OPERATIONS IN 2009

**The Advisory Council convened four formal meetings** and one conference call in 2009 and provided counsel on a range of topics. At each meeting, the NWMO brought forward the organization's key plans under development and reports on milestone activities for information and discussion. Agendas incorporated many topics identified by the Council as areas of interest on which members wished to deliberate and included presentations by NWMO management in response to Council requests. Each meeting also provided an opportunity for an *in-camera* session where members could deliberate privately without NWMO management or staff present.

At the Advisory Council's request, formal minutes of its meetings are recorded and posted on the NWMO website at www.nwmo.ca/advisorycouncilminutes.

**The Advisory Council Chair** has direct access to NWMO Board meetings to ensure a comprehensive exchange of information and to provide a conduit for the Chair to keep the Council fully informed on Board matters, and vice versa. Council members and the Board of Directors will convene in early 2010 to discuss the NWMO's plans for implementing the process to select a site for a deep geological repository.

## HIGHLIGHTS OF COUNCIL'S ACTIVITIES

**Over the course of 2009,** the Advisory Council provided important advice to the NWMO on next steps in implementing Adaptive Phased Management. Members themselves identified a number of topics for deliberation. Several participated in NWMO activities outside of formal Council meetings as a means of observing directly engagement activities and issues being raised by dialogue participants.

## SITING

**The Advisory Council was briefed** on the draft process to select a site for a deep geological repository and invited to comment on the proposal. The Council suggested that the NWMO consider that its success will be determined by the quality of its partner and that the organization should consider the profile and values of potential siting partners. Members offered advice on transportation-related aspects of siting and how the NWMO might address community well-being. The organization was encouraged to elaborate on anticipated community impacts over the different phases of project implementation.

The Council said that in its communications the NWMO must continue reinforcing that the direction of Adaptive Phased Management could change as plans are adapted. The NWMO was also advised to further articulate the retrievability aspect of APM.

Throughout 2009, Council members were informed of comments arising from public dialogues on the draft siting process. Toward the end of the year, the Council reviewed and commented on plans for initiating the selection process in 2010. Members generally agreed that a measured and gradual launch would be appropriate, but encouraged the NWMO to ensure a clear distinction is made between the development of the process and the actual launch.

## ENGAGEMENT, RELATIONSHIP-BUILDING AND SOCIAL RESEARCH

**The Advisory Council's ongoing reviews** of the NWMO's engagement activities included discussion about relationships with municipal, provincial and federal governments. Members emphasized that in preparing for siting the NWMO must continue to ensure that elected politicians and public officials are well-informed and supportive of the siting process. The Advisory Council was pleased that the Municipal Forum was established in 2009. Council member Eva Ligeti attended all the Forum meetings and regularly briefed the Advisory Council on the group's activities.

The Council also reviewed and commented on the NWMO's public information sessions, multi-party dialogues, citizens' panels, youth engagement and Aboriginal engagement activities.

## TECHNICAL ASPECTS OF APM

**The Advisory Council was regularly briefed** on progress in the NWMO's technical program. Late in the year, the Council met with the Chair of the Independent Technical Review Group (ITRG) to receive and discuss the findings of the ITRG's 2009 review of the NWMO's technical program. Among other things, the Council discussed the ITRG's recommendation that data on sedimentary rock properties should whenever possible be provided by accredited laboratories and advised that this might limit the expertise available to the NWMO.

## BUSINESS PLANNING

**Council Members provided ongoing counsel** on the NWMO's 2009 work programs and advised on the development of the 2010-2014 business plan.

## TOPICS OF PARTICULAR INTEREST AS IDENTIFIED BY THE ADVISORY COUNCIL

### Niigani

The Advisory Council requested to hold annual meetings with Niigani, the Aboriginal working group created by the Elders Forum. The Council met with Niigani in November to hear reflections on the working group's 2009 activities. The Council encouraged the NWMO to continue involving Niigani in as many discussions as possible with Aboriginal groups in Canada.

### Aboriginal Traditional Knowledge

During the year, the Council examined the Aboriginal dimension of the NWMO's work and discussed with staff their reflections on how the organization has interwoven Aboriginal Traditional Knowledge. The Council suggested a number of areas the NWMO will need to consider in determining how the organization and its siting partner will integrate Traditional Knowledge once siting has begun.

Advisory Council member, Dr. Marlyn Cook, offered to provide a session on traditional healing to the Council and delivered the session examining some of the challenges facing Aboriginal communities at the May Council meeting.

### Youth

Further to the Advisory Council's long-standing interest in engaging youth, members met with the NWMO's Youth Roundtable in May and received a presentation on its work. Members were impressed with the quality of the content and the relevance of the group's recommendations. Later in the year, the Council reviewed the NWMO's dispositioning of the Roundtable's recommendations and commended the organization for its response.

### Transportation

The Advisory Council discussed transportation-related aspects of Adaptive Phased Management throughout the year. At the Council's request, NWMO staff made a presentation on the subject. Members recommended that the organization elaborate on transportation in its communication materials. They also suggested that the NWMO conduct an illustrative transportation route study and that the Municipal Forum be involved in developing the study.

**Evolving External Landscape**
At the request of the Advisory Council, the NWMO provided regular updates on the evolving external landscape in the nuclear industry in both Canada and internationally. Of particular interest to the Council were the possible impacts on the NWMO's work of changing plans in several provinces for new build nuclear.

The Advisory Council also considered the range of nuclear waste management plans under development in Canada. Members discussed the importance of enhanced cooperation on the long-term management of radioactive wastes in Canada.

The Council was provided regular updates and closely tracked developments on Ontario Power Generation's proposed deep geologic repository (DGR) for low and intermediate level waste. Members felt the NWMO was gaining valuable experience for Adaptive Phased Management through its participation in the DGR, and stressed the importance of strong Aboriginal relations given the direct implications for the NWMO's work and its strong commitment to solid working relationships with Aboriginal Peoples.

Results of a national telephone survey of Canadians by IPSOS were presented to the Council early in the year and provided information for a lengthy discussion on a number of findings about long-term nuclear waste management.

## STAFF CAPABILITY

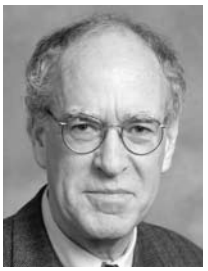
**Further to the Advisory Council's 2005 recommendation** that the NWMO required broader skills, the organization provided regular updates on its hiring plans and the capabilities provided by its recent recruits. The Council agreed all areas of the organization have been strengthened.

**Supplementary Activities:**
- Council members attended an Aboriginal Cultural Training session presented by Niigani members early in 2009;
- several Council members observed sessions of the NWMO's Citizen Panels;
- Council continued to provide input into the NWMO's engagement plans at the municipal level;
- several members of the Advisory Council attended the NWMO Elders Forum in July; and
- in October, Advisory Council member David Cameron spoke about the Council's role at the Nuclear Power in Society Conference.

**Preparing for Statutory Role:**
During 2009, Council members began planning for the submission of its comments in the NWMO's first triennial report which will be submitted to the Minister of Natural Resources in March 2011.

# Members of the Advisory Council

**Hon. David Crombie**
The Hon. David Crombie is the President of David Crombie and Associates, the Chair of Toronto Lands Corporation, and past Chair of Ontario Place. He is the immediate past President and CEO of the Canadian Urban Institute. He is also 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. Mr. Crombie is an Officer of the Order of Canada.



**David R. Cameron**
David R. Cameron is the Chair of and a Professor in the Department 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 services. He continues to advise on a wide range of governmental issues.

**Dr. Marlyn Cook**
Dr. Marlyn Cook is presently Chief of Staff with Weeneebayko General Hospital in Moose Factory, Ontario. Dr. Cook is Cree and a member of the Grand Rapids First Nation in Northern Manitoba. She has practised medicine in the Mohawk community of Akwesasne, in Sioux Lookout Zone and in a number of northern Aboriginal communities in Manitoba. She is active in her community serving as an advisor and Board member to a number of organizations. Dr. Cook is known for her work blending Western and Traditional medicine, and has been involved with sharing this knowledge with medical students and doctors throughout Canada. Her belief is that healing needs to be focused on all aspects of the person – spiritual, mental, physical and emotional.

**Frederick Gilbert**

Frederick Gilbert is the President and Vice-Chancellor of Lakehead University in Thunder Bay, Ontario. He also serves as a member of the Board of Directors of the Thunder Bay Regional Research Institute and Chair of the Board of Directors of the Northern Ontario School of Medicine. As well, he is a member of the Advisory Board of the Mowat Centre for Policy Innovation. Dr. Gilbert has had an extensive teaching, research and administrative career in the United States and Canada at Colorado State University, the University of Northern British Columbia, Washington State University, the University of Guelph and the University of Maine, and also has held several environmental and wildlife management public service appointments and positions.

**Rudyard Griffiths**

Rudyard Griffiths is an author, public commentator and advisor to various not-for-profit foundations and organizations in Canada and abroad. Mr. Griffiths is the co-founder of the Dominion Institute (a national charity dedicated to the promotion of civic literacy), the co-founder of the Salon Speakers Series and a co-organizer of the Munk Debates (Canada's premiere debate series). In 2006, Mr. Griffiths was recognized by the Globe and Mail as one of Canada's Top 40 under 40. He sits on a variety of not-for-profit boards and is a columnist with the National Post. He is the author of *Who We Are: A Citizen's Manifesto* published by Douglas & McIntyre in 2009. Mr. Griffiths holds a degree from the University of Toronto and a Master of Philosophy from Emmanuel College in Cambridge, UK.

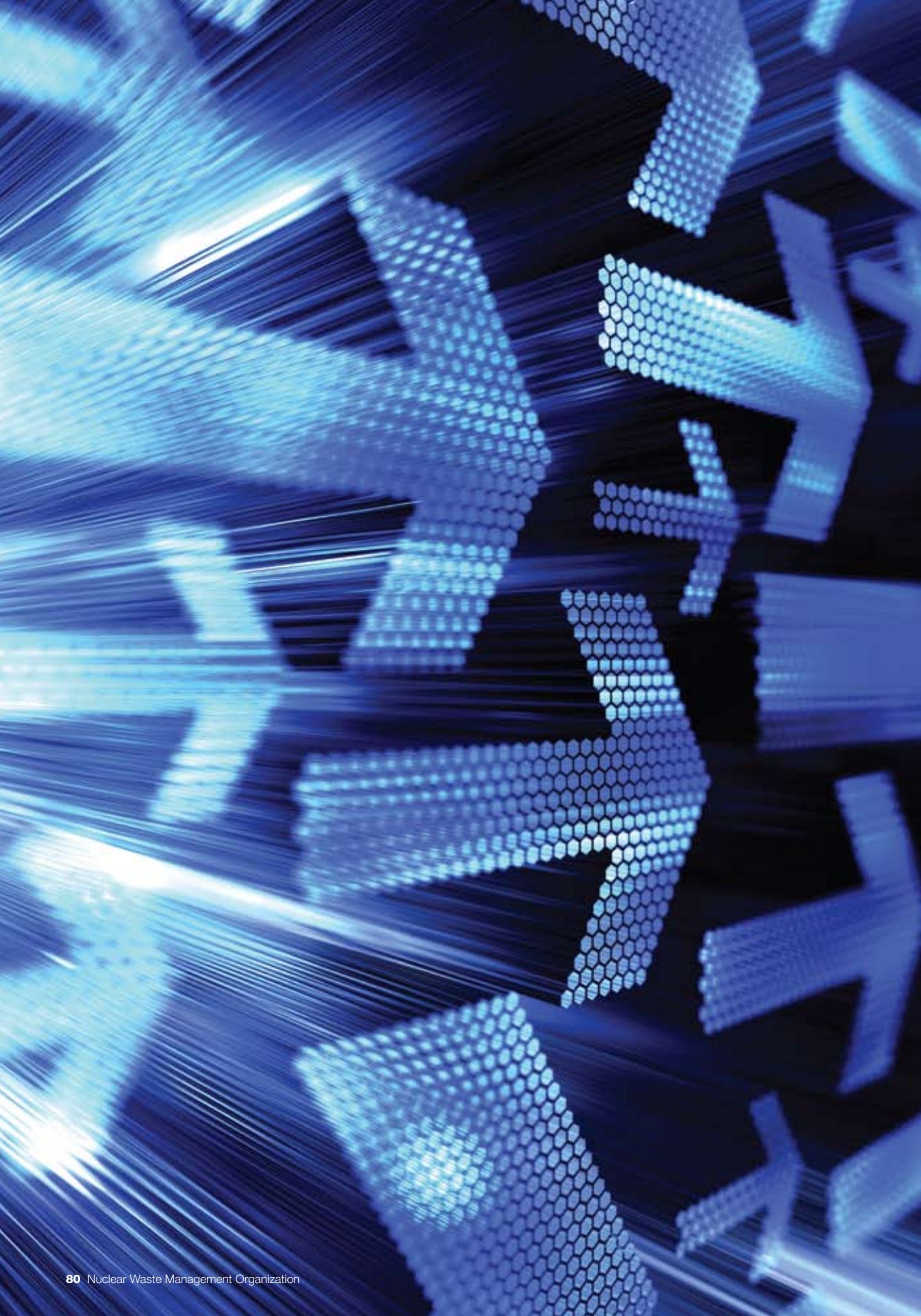
**Eva Ligeti**

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. Ms. Ligeti serves on the Council of the Federation of Canadian Municipalities' Green Municipal Fund, is a member of the Province of Ontario's Expert Panel on Climate Change Adaptation, and is a co-chair of the Greening Greater Toronto Task Force. She teaches Environmental Law in the graduate program in Environmental Science at the University of Toronto.

**Derek Lister**
Derek Lister is Professor Emeritus in 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, and he holds positions on a number of national and international committees advising government and industry.

**Dougal McCreath**
Dougal McCreath is the Director of the School of Engineering and a Professor of Civil and Mining Engineering at Laurentian University in Sudbury, Ontario. A Fellow of the Engineering Institute of Canada, he has wide teaching, research and international consulting interests, ranging from the design of deep underground excavations to the recovery and sustainability of damaged eco-systems. He has served on two Canadian Environmental Assessment Agency review panels dealing with nuclear related issues.

**Donald Obonsawin**
Donald Obonsawin is the founder and President of Directions, a management consulting company. From 2003 to 2007, he was President and CEO of Jonview Canada Inc., Canada's largest receptive tour operator. Prior to that, he had been Deputy Minister of seven Ontario government ministries over a 15-year period. He also held senior positions with the federal departments of Indian Affairs and Northern Development Canada, and Health and Welfare Canada. Mr. Obonsawin is Abenaki and a member of the Odanak First Nation.



# Auditors' Report and Financial Statements

## MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL REPORTING

The accompanying Financial Statements of the 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 27, 2010.

Management maintains a system of internal controls which is 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 opinion.

FEBRUARY 18, 2010

K. E. Nash

Ken Nash
President

Steve Cavan
Chief Financial Officer

## 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, 2009, and the statements of operations and changes in net assets and of 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, 2009, and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles. As required by the *Canada Corporations Act*, we report that, in our opinion, these principles have been applied on a basis consistent with that of the preceding year.

Deloitte & Touche LLP

Chartered Accountants
Licensed Public Accountants
January 27, 2010

# Statement of Financial Position

**Statement of Financial Position**
AS AT DECEMBER 31, 2009

| | 2009 | 2008 |
|---|---|---|
| **ASSETS** | | |
| CURRENT | | |
| Cash | $ 10,738,363 | $ 9,835,204 |
| Accounts receivable (NOTE 4) | 336,074 | 323,196 |
| Member contributions receivable (NOTE 5) | 918,574 | – |
| Prepaid expenses and deposits | 322,244 | 375,781 |
| | **12,315,255** | **10,534,181** |
| CAPITAL ASSETS (NOTE 3) | 3,185,874 | 2,301,065 |
| DEFERRED PENSION ASSET (NOTE 6) | 7,821,142 | – |
| | $ **23,322,271** | $ **12,835,246** |
| **LIABILITIES** | | |
| CURRENT | | |
| Accounts payable and accruals (NOTE 4) | $ 11,606,300 | $ 3,568,793 |
| Deferred lease inducements (NOTE 7) | 225,625 | 79,191 |
| Member contributions refundable (NOTE 5) | 509,330 | 6,886,197 |
| | **12,341,255** | **10,534,181** |
| Other post employment and pension benefits (NOTE 6) | 4,909,088 | – |
| COMMITMENTS (NOTE 9) | | |
| **NET ASSETS** | | |
| INTERNALLY RESTRICTED | 6,071,928 | 2,301,065 |
| | $ **23,322,271** | $ **12,835,246** |

APPROVED BY THE BOARD OF DIRECTORS, FEBRUARY 18, 2010

K. E. Nash

Ken Nash
President and CEO
Toronto, Canada

C. Ian Ross
Chair – Audit, Finance and
Risk Committee
Toronto, Canada

# Statement of Operations and Changes in Net Assets

**Statement of Operations and Changes in Net Assets**

YEAR ENDED DECEMBER 31, 2009

| | 2009 | 2008 |
|---|---|---|
| **REVENUE** | | |
| Member contributions (NOTES 4 AND 10) | $ 54,746,267 | $ 27,322,542 |
| Non-member contributions | 386,416 | 323,458 |
| Interest income | 122,047 | 418,890 |
| | 55,254,730 | 28,064,890 |
| Member receivable/refundable (NOTE 5) | 409,244 | (6,886,197) |
| | **55,663,974** | **21,178,693** |
| **EXPENSES** | | |
| Adaptive Phased Management | | |
| Staffing and administration (NOTE 4) | 9,713,036 | 8,298,803 |
| Technical research and development | 8,318,083 | 7,057,297 |
| Stakeholder engagement and communications | 6,141,635 | 3,044,116 |
| Compliance, capacity building and governance | 872,499 | 835,568 |
| Social research and support implementation | 524,433 | 269,499 |
| Funding formula | 1,039,622 | – |
| | **26,609,308** | **19,505,283** |
| Deep Geological Repository | | |
| Regulatory review stage – contracts | 17,277,866 | – |
| Salaries and administration | 5,869,911 | – |
| | **23,147,777** | **–** |
| Life Cycle and Liability Management | | |
| Contract | 34,776 | – |
| Salaries and administration | 1,477,959 | – |
| | **1,512,735** | **–** |
| Amortization | 623,291 | 311,118 |
| | **51,893,111** | **19,816,401** |
| Excess of revenue over expenses for the year | 3,770,863 | 1,362,292 |
| Net assets, beginning of year | 2,301,065 | 938,773 |
| **NET ASSETS, END OF YEAR** | **$ 6,071,928** | **$ 2,301,065** |

# Statement of Cash Flows

**Statement of Cash Flows**

| YEAR ENDED DECEMBER 31, 2009 | 2009 | 2008 |
|---|---|---|
| OPERATING ACTIVITIES | | |
| Cash received from contributions | $ 48,246,486 | $ 23,434,398 |
| Interest received on short-term investments | 122,047 | 418,890 |
| | **48,368,533** | **23,853,288** |
| Cash paid for materials and services | (47,167,504) | (17,343,779) |
| Cash received from OPG in settlement of Asset Transfer Agreement | 3,077,956 | – |
| Cash paid to OPG in settlement of Pension Transfer Agreement | (1,867,726) | – |
| | **2,411,259** | **6,509,509** |
| INVESTING ACTIVITIES | | |
| Purchase of capital assets | (1,508,100) | (1,673,410) |
| **NET INCREASE IN CASH** | **903,159** | **4,836,099** |
| **CASH, BEGINNING OF YEAR** | 9,835,204 | 4,999,105 |
| **CASH, END OF YEAR** | $ **10,738,363** | $ **9,835,204** |

# Notes to the Financial Statements

December 31, 2009

## 1. 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. In accordance with the *NFWA*, the NWMO established an Advisory Council, conducted a study and provided recommendations on the long-term management of used nuclear fuel to the Government of Canada. The results of the study and the recommendations were submitted in November 2005. As part of the long-term mandate, the NWMO is now responsible for implementing the Adaptive Phased Management, an approach selected by the Government of Canada to address the management of used nuclear fuel.

The NWMO formally began operations on October 1, 2002. Its founding members are Hydro-Québec, NB Power Nuclear, 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.

In addition to the above mandate, effective January 1, 2009, NWMO entered into two new agreements with Ontario Power Generation Inc. (OPG) to expand its operations to provide project management services for OPG's Deep Geologic Repository for Low and Intermediate Level Waste (DGR services) and certain provision costing and accounting services relating to nuclear life cycle liability management (LLM services).

## 2. SIGNIFICANT ACCOUNTING POLICIES

**Basis of presentation**

The 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 & office equipment | 7 years |
| Computer equipment and software | 3 years |
| Leasehold improvements | Initial lease term plus one renewal period |

**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.

**Contribution revenue**
Contributions are recognized as revenue in the year to which they relate. Excess member contributions require repayment, and shortfalls will be invoiced in accordance with the membership agreement. Any excess of revenue over expenses is reflected as internally restricted net assets, as all net assets ultimately belong to the members in accordance with the membership agreement.

**Pension and other post employment benefits**
NWMO's post employment benefit programs include a contributory defined benefit registered pension plan, a defined benefit supplementary pension plan, and other post employment benefits, including group life insurance, health care and long-term disability benefits. NWMO has adopted the following policies with respect to accounting for these post employment benefits:

i) NWMO accrues its obligations under pension and other post employment benefit ("OPEB") plans. The obligations for pension and OPEB costs are determined using the projected benefit method pro-rated on service. Under this method, the benefit costs are amortized over the average remaining service period of active employees. Any excess of the net actuarial gain (loss) over 10% of the greater of the benefit obligation and the fair value of plan assets is amortized over the average remaining service period of active employees. The average remaining service period for active employees is 12 years (see also Note 6).

ii) The obligations are affected by salary levels, inflation, and cost escalation of specific items (e.g. dental and health claims). Pension and OPEB costs and obligations are determined annually by independent actuaries using management's best estimate assumptions. The discount rates used by NWMO in determining projected benefit obligations and the costs for the Organization's employee benefit plans are based on representative AA corporate bond yields.

iii) Pension fund assets are valued using market-related values for the purposes of determining actuarial gains or losses and the expected return on plan assets. The Plan's assets consist of investment grade securities. Market and credit risk on these securities are managed by the Plan by placing plan assets in trust and through the Plan investment policy.

The measurement date used to determine the accrued benefit obligation for all benefit plans is December 31, 2009. The most recent actuarial valuation of all benefit plans was done as of December 31, 2009. An initial valuation was also done of the plans as of January 1, 2009, based on the transfer of the pension liability from OPG (Note 4).

**Research and development**
Research and development costs are charged to operations in the year incurred.

**Foreign currency translation**
Monetary assets and liabilities denominated in foreign currencies are translated into Canadian currency at the year end exchange rate. Any resulting gain or loss is reflected in salaries and administration expenses.

**Financial instruments**
NWMO has classified its financial instruments as follows:

- Cash and cash equivalents as "held-for-trading." Held-for-trading items are carried at fair value, with changes in their fair value recognized in the Statement of Operations in the current period.

- Amounts receivable as "loans and receivables." "Loans and receivables" are carried at amortized cost, using the effective interest method, net of any impairment.

- All accounts payable and accrued liabilities as "other liabilities." "Other liabilities" are carried at amortized cost, using the effective interest method.

**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.

**Adoption of accounting policies**
*Series of Sections 4400 – Not-for-profit organizations*
In September 2008, the Canadian Institute of Chartered Accountants ("CICA") issued amendments to several of the existing sections on accounting, measurement and financial reporting by Not-for-profit organizations contained in the 4400 series of Sections of the CICA Handbook. The adoption of these amendments has not resulted in any change in how NWMO accounts for its transactions, but has resulted in a change in presentation of the statement of financial position, where net assets invested in capital assets are now presented under internal restrictions.

*Section 1000 – Financial statement concepts*
On January 1, 2009, NWMO adopted the amendments made to Section 1000 "Financial statements concepts." The amended section requires an entity to demonstrate that any expenditure that it wishes to present as an asset meets the definition of an asset or is permitted to be recorded as assets under specific CICA Handbook section, and any revenue that it wishes to present as liability must meet the definition of a liability. The adoption of these amendments, which represents the elimination of the matching concept, has not resulted in any change in how NWMO accounts for its transactions.

**Changes in accounting policies**

*Section 3855- Financial Instruments – Recognition and Measurement*

In April 2008, the Canadian Institute of Chartered Accountants ("CICA") amended Section 3855, "Financial Instruments – Recognition and Measurement" of the CICA Handbook. The amended section allows not-for-profit organizations to elect not to account for certain non-financial contracts as derivatives and also not to account for certain derivative features embedded in non-financial contracts, leases and insurance contracts as embedded derivatives. If NWMO did not elect this option, it would be required to account for derivative financial instruments and embedded derivative financial instruments in accordance with the guidance in section 3855.

NWMO has elected to adopt these amendments to Section 3855 effective for its fiscal year beginning on January 1, 2009, and has elected not to account for non-financial contracts as derivatives, and not to account for embedded derivatives in non-financial contracts, leases and insurance contracts as embedded derivatives. The adoption of this amendment has not resulted in any changes to the current or prior year's financial statements.

*Section 3862- Financial Instruments – Disclosures, Section 3863 – Financial Instruments – Presentation*

On October 15, 2008, the CICA deferred indefinitely the requirement of not-for-profit organizations to implement sections 3862 and 3863. Section 3862 requires the disclosure of information about: (a) the significance of financial instruments for the entity's financial position and performance, and (b) the nature and extent of risks arising from the financial instruments to which NWMO is exposed during the period and at the balance sheet date, and how NWMO manages those risks. Section 3863 establishes standards for presentation of financial instruments and non-financial derivatives.

NWMO has elected to defer application of these standards and as such continues to follow the disclosure requirements of section 3861.

## 3. CAPITAL ASSETS

| | 2009 | | | 2008 |
|---|---|---|---|---|
| | Cost | Accumulated Amortization | Net Book Value | Net Book Value |
| Furniture and office equipment | $ 1,382,094 | $ 283,039 | $ 1,099,055 | $ 739,178 |
| Computer equipment and software | 1,442,053 | 590,587 | 851,466 | 1,109,010 |
| Leasehold improvements | 1,399,605 | 164,252 | 1,235,353 | 452,877 |
| | **$ 4,223,752** | **$ 1,037,878** | **$ 3,185,874** | **$ 2,301,065** |

## 4. RELATED PARTY TRANSACTIONS AND BALANCES

Transactions and balances not otherwise disclosed separately in the financial statements are as follows:

| | 2009 | 2008 |
|---|---|---|
| TRANSACTIONS DURING THE YEAR | | |
| Member contributions | | |
| Ontario Power Generation Inc. | $ 52,087,594 | $ 25,097,039 |
| NB Power Nuclear | 1,380,529 | 1,155,603 |
| Hydro-Québec | 1,278,144 | 1,069,900 |
| | **$ 54,746,267** | **$ 27,322,542** |
| TRANSACTIONS WITH ONTARIO POWER GENERATION INC. | | |
| Payments | | |
| Managerial services (included in staffing and administration expenses) | 285,927 | 6,098,516 |
| Receipts | | |
| Reimbursement for leaseholds and specific capital assets related to 22 St. Clair Avenue East | – | 281,925 |
| Rent and shared cost recovery | – | (295,232) |
| **BALANCES OUTSTANDING** | | |
| Contributions received in advance or due to OPG (included in accounts payable and accruals) | 214,000 | 1,214,648 |
| Amounts due from Ontario Power Generation Inc. (included in accounts receivable) | – | 57,170 |

Related party transactions are recorded at the exchange amount.

NWMO and Ontario Power Generation Inc. (OPG) entered into new service agreements as of January 1, 2009, to provide Deep Geologic Repository (DGR) project management services and Life Cycle and Liability Management (LLM) provision costing and accounting services. As part of this arrangement, staff from OPG, who had been supporting NWMO while employed by OPG, became directly employed by NWMO as of January 1, 2009.

Pursuant to an Asset Transfer Agreement dated January 1, 2009, NWMO had acquired certain assets and liabilities of OPG relating to its nuclear waste management division. The transfer agreement identifies all capital assets, contracts, purchase orders and other assets and liabilities that NWMO assumed, effective January 1, 2009. Assets from OPG were transferred to NWMO at book value. Any liabilities assumed from OPG were captured as part of the closing statement process, and NWMO received working capital compensation for such assumed liabilities that were incurred while the business was under the direction of OPG.

The following are the transactions with OPG pursuant to this agreement:

| | |
|---|---|
| CASH RECEIVED | |
| Invoices/holdbacks paid on behalf of OPG | $ 2,077,481 |
| Final cost-sharing adjustments (leases, salaries, etc.) | 25,890 |
| Employees' liabilities assumed by NWMO, plus interest | 733,180 |
| Employee compensation costs paid by NWMO | 241,405 |
| | 3,077,956 |
| CASH PAYMENT | |
| Transferred assets received by NWMO | – |
| | $ 3,077,956 |

Effective January 1, 2009, NWMO entered into a Pension Transfer Agreement, and Pension and Benefit Cost Allocation Agreement with OPG whereby NWMO agreed that the pension assets and employee future benefit obligations of OPG relating to the OPG employees transferred to NWMO were transferred to, and assumed by, NWMO. Both parties settled in cash the difference between pension assets transferred and the sum of the liabilities of pension and non-pension post employment benefits determined on an accounting basis as at December 31, 2008. As a result, NWMO paid $1.8 million to OPG to settle the difference (including interest). The breakdown is as follows:

| | | |
|---|---|---|
| Pension assets receivable in NWMO pension plan | | $ 23,921,000 |
| Less: | | |
| Pension liability assumed by NWMO | $ 17,936,000 | |
| Supplementary pension liability assumed | 839,000 | |
| Non-pension post retirement benefit liability assumed by NWMO | 3,352,000 | 22,127,000 |
| | | 1,794,000 |
| Interest expense | | 73,726 |
| Total cash settlement | | $ 1,867,726 |

As of December 31, 2009, approximately $25.5 million of pension plan assets are held and managed by OPG, pending transfer to the NWMO pension plan upon approval by the Financial Services Commission of Ontario (FSCO).

Prior to January 1, 2009, NWMO and OPG had entered into a cost-sharing arrangement that addressed costs of OPG staff working on NWMO work programmes, costs of setting up shared office space and office management costs. Staff costs of OPG employees working on NWMO programmes were cost-shared on the basis of full-time commitment, percentage commitment or variable hours worked. Costs of setting up shared office space and the ongoing maintenance of the office space were shared on the basis of planned staff occupancy levels that had been determined as 67% NWMO and 33% OPG. Examples of shared costs that were subject to the cost-sharing arrangement were leasehold improvements, purchase of new office furniture, rental costs of leased premises, utility costs, insurance and general office supplies. This cost-sharing agreement expired on December 31, 2008.

**Board of Directors**
The following NWMO Directors are on the OPG Board:

Gary Kugler
Ian Ross

The following OPG Executives are on the NWMO Board:

Donn Hanbidge – Chief Financial Officer, Ontario Power Generation
Pierre Charlebois – up until May 29, 2009, he was the Chief Operating Officer with OPG, but then retired and became an independent director appointed by OPG.

## 5. MEMBER CONTRIBUTIONS REFUNDABLE/RECEIVABLE

In accordance with the terms of the NWMO membership agreement, the following is a summary of amounts refundable/receivable from the members:

| | 2009 | 2008 |
|---|---|---|
| REFUNDABLE TO MEMBERS | | |
| Ontario Power Generation | $ – | $ 6,251,290 |
| NB Power | 230,910 | 287,843 |
| Hydro-Québec | 213,786 | 266,496 |
| AECL | 64,634 | 80,568 |
| | 509,330 | 6,886,197 |
| RECEIVABLE FROM MEMBER | | |
| Ontario Power Generation | (918,574) | – |
| Net (receivable)/refundable | $ (**409,244**) | $ **6,886,197** |

## 6. PENSION AND OTHER POST EMPLOYMENT BENEFIT PLANS

Effective January 1, 2009, NWMO offers certain benefits to employees and retirees. A brief overview of these benefit plans is set out below.

a) Registered pension plan
The registered pension plan is a contributory defined benefit plan covering most employees and retirees. The Plan is funded and fund assets include pooled funds that are managed by Manulife Financial Corporation. The benefit costs and assets related to this plan are recorded in NWMO's financial statements.

b) Supplementary pension plan
The supplementary pension plans are defined benefit plans covering certain employees and retirees. The plan is unfunded.

c) Other post employment benefits
These other post employment benefits are comprised of medical, dental, and group life insurance coverage for certain groups of full-time employees who have retired from NWMO and are between the ages of 55 and 65.

The significant actuarial assumptions adopted in estimating NWMO's accrued benefit obligations are as follows:

| | Registered pension plan | Supplementary pension plan | Other post employment benefit |
|---|---|---|---|
| WEIGHTED AVERAGE ASSUMPTIONS FOR BENEFIT OBLIGATION AND COSTS | | | |
| Weighted-average discount rate | 5.5% | 5.5% | 5.5% |
| Salary schedule escalation rate | 3 | 3 | – |
| Rate of cost of living increase | 2 | 2 | – |
| Rate of increase in health care cost trend | – | – | 6.2 |
| Expected return on plan assets | 7 | – | – |
| Average remaining service life for employees | 12 years | 12 years | 16 years |

Information for NWMO's pension and post employment benefits, including long-term disability (LTD) at December 31, 2009, is as follows:

The amounts are included in the respective expense categories in the Statement of Operations.

| | Registered pension plan | Supplementary pension | Other post employment benefits/LTD |
|---|---|---|---|
| CHANGES IN ACCRUED BENEFIT OBLIGATION | | | |
| Accrued benefit obligation, January 1 | $ (17,936,000) | $ (839,000) | $ (3,352,000) |
| Current service cost | (460,000) | (101,000) | (370,000) |
| Interest cost | (1,382,000) | (71,000) | (268,000) |
| Transfers in | (365,000) | – | – |
| Employee contributions | (540,000) | – | – |
| Benefits paid | 1,363,000 | 17,000 | 49,000 |
| Actuarial gain | (6,682,000) | (338,000) | (1,855,000) |
| Accrued benefit obligation, December 31 | $ (26,002,000) | $ (1,332,000) | $ (5,796,000) |
| CHANGES IN PLAN ASSETS | | | |
| Fair value of plan assets, January 1 | 23,921,000 | – | – |
| Actual return on plan assets | 3,157,000 | – | – |
| Reciprocal transfers | 365,000 | – | – |
| Benefits paid | (1,363,000) | – | (49,000) |
| Employers' contribution | 1,953,000 | – | 49,000 |
| Employees' contribution | 540,000 | – | – |
| Fair value of plan assets, December 31 | $ 28,573,000 | $ – | $ – |
| FUNDED STATUS | | | |
| (Unfunded benefit obligation) funded excess | 2,571,000 | (1,332,000) | (5,796,000) |
| Unamortized net actuarial losses (gains) | 5,250,142 | 338,000 | 1,854,912 |
| ACCRUED BENEFIT ASSET (LIABILITY) AT END OF YEAR | $ 7,821,142 | $ (994,000) | $ (3,941,088) |
| Short-term portion | – | – | (26,000) |
| Long-term portion | 7,821,142 | (994,000) | (3,915,088) |
| | $ 7,821,142 | $ (994,000) | $ (3,941,088) |
| COMPONENTS OF COST RECOGNIZED | | | |
| Current service cost, net of employee contributions | 460,000 | 101,000 | 370,000 |
| Interest cost on accrued benefit obligation | 1,382,000 | 71,000 | 268,000 |
| Actual return on Plan Asset | (3,157,000) | – | – |
| Difference between expected and actual return on plan assets for the year | 1,432,000 | – | – |
| Cost recognized | $ 117,000 | $ 172,000 | $ 638,000 |

| | Other post employment benefits/LTD |
|---|---|
| Effect of 1% increase in health care cost trends on: | |
| Accrued benefit obligation | $ 1,076,000 |
| Service cost and interest cost | 119,000 |
| Effect of 1% decrease in health care cost trends on: | |
| Accrued benefit obligation | (830,000) |
| Service cost and interest cost | (58,000) |

The supplementary pension plan is not funded, but is secured by Letters of Credit totaling $840,700.

## 7. DEFERRED LEASE INDUCEMENTS

| | 2009 | 2008 |
|---|---|---|
| Tenant inducements | $ 263,076 | $ 93,166 |
| Less: accumulated amortization | (37,451) | (13,975) |
| | $ **225,625** | $ **79,191** |

## 8. GUARANTEES

In the normal course of business, NWMO enters into agreements that meet the definition of a guarantee.

(a) NWMO has provided indemnities under lease agreements for the use of its premises. Under the terms of these agreements, NWMO agrees to indemnify the counterparty for various items including, but not limited to, all liabilities, loss, suits and damages arising during, on or after the term of the agreement.

(b) NWMO indemnifies all directors, officers and employees acting on behalf of NWMO for various items including, but not limited to, all costs to settle suits or actions due to services provided to NWMO, subject to certain restrictions

The nature of these indemnification agreements prevents NWMO from making a reasonable estimate of the maximum exposure due to the difficulties in assessing the amount of liability which stems from the unpredictability of future events and the unlimited coverage offered to counterparties. Historically, NWMO has not made any payments under such or similar indemnification agreements, and therefore, no amount has been accrued with respect to these agreements.

NWMO also arranged a standby Letter of Credit to secure its supplementary pension plan (see Note 6).

## 9. COMMITMENTS

The following summarizes NWMO's lease commitments:

(i) On December 22, 2006, NWMO entered into a five-year lease for its offices at 22 St. Clair Avenue East, Toronto, Ontario, commencing July 1, 2007. Annual total lease payments are $229,360 plus additional amounts for taxes, utilities and maintenance, for the term of the lease. NWMO has an option to extend the term of the lease for one additional term of five years on the same terms and conditions, except for the annual minimum rent payable, which will be $265,198.

(ii) On January 10, 2008, NWMO amended its lease at 22 St. Clair Avenue East, Toronto, Ontario, to include an additional space commencing June 1, 2008, for a term of 4 years and 2.5 months. Annual total lease payments for the additional space are $86,872 plus additional amounts for taxes, utilities and maintenance, for the term of the lease. NWMO has an option to extend the term of the lease for one additional term of five years on the same terms and conditions, except for the annual minimum rent payable, which will be $102,501.

(iii) On December 15, 2008, NWMO entered into a five-year lease for its offices at 2 St. Clair Avenue East, Toronto, Ontario, commencing August 1, 2009. Annual total lease payments are $181,951 plus additional amounts for taxes, utilities and maintenance, for the term of the lease. NWMO has an option to extend the term of the lease for one additional term of three years on the same terms and conditions, except for the annual minimum rent payable, which will be determined based on market rents.

The estimated annual minimum payments over the initial term of these leases are as follows:

| | |
|---|---|
| 2010 | $ 506,070 |
| 2011 | 512,313 |
| 2012 | 423,539 |
| 2013 | 203,357 |
| 2014 | 118,625 |
| | $ 1,763,904 |

## 10. SEGMENT REPORTING

NWMO has two reportable segments as follows:

- Federal mandated program (Adaptive Phased Management of long-term used nuclear fuel – "APM")

- Other direct services outside mandate, which include the Deep Geologic Repository (DGR) and Life Cycle and Liability Management (LLM) for Ontario Power Generation Inc. with service contracts which became effective January 1, 2009.

The accounting policies followed by the segments are the same as those described in the summary of significant accounting polices (see Note 2). Segment information on the above basis is as follows:

| YEAR ENDED DECEMBER 31, 2009 | APM | DGR/LLM | Totals |
|---|---|---|---|
| Revenue – member contributions | $ 29,129,416 | $ 26,412,511 | $ 55,541,927 |
| Interest revenue/other income | 116,384 | 5,663 | 122,047 |
| Total income | 29,245,800 | 26,418,174 | 55,663,974 |
| Amortization of capital assets | 579,687 | 43,604 | 623,291 |
| Operating cost | 26,609,308 | 24,660,512 | 51,269,820 |
| Excess of revenue over expense | 2,056,805 | 1,714,058 | 51,893,111 |
| Total assets | 12,683,904 | 10,638,367 | 23,322,271 |
| Expenditure for segment capital assets | 904,860 | 603,240 | 1,508,100 |

The allocation of the common service costs to each function of the above segment is based on the number of direct staff in each function for the following costs:

Payroll-related costs, pension expenses, human resource support, office facilities and IT support.

Other common service costs, such as executive's office, finance and accounting, performance assurance, and legal services, are allocated to each function based on its budgeted direct operating costs.

## 11. CAPITAL MANAGEMENT

In managing capital, NWMO focuses on liquid resources available for operations and project implementation. The need for sufficient resources is considered in the preparation of a long-range business plan and annual budget, and in monitoring cash flows and actual expenditures compared to the business plan and budget. NWMO has sufficient liquid resources to meet its current obligations.

## 12. COMPARATIVE FIGURES

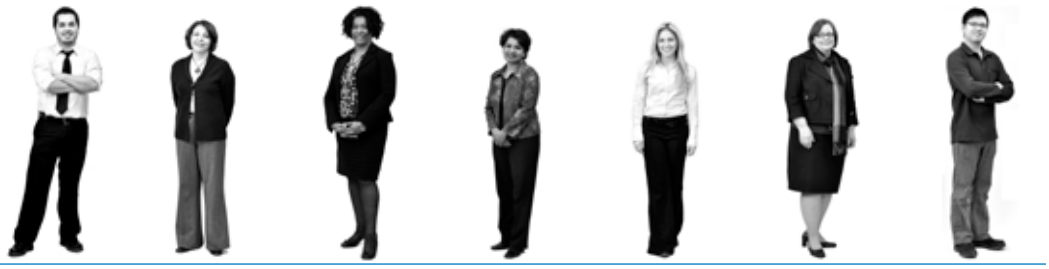
Certain of the prior year's comparative figures have been reclassified to conform to the current year's presentation.

# Our Team

The NWMO is implementing Canada's plan for the long-term management of used nuclear fuel. The organization employs more than 100 people with diverse skill sets ranging from social and technical research to public engagement and liability management. Its supporting infrastructure includes human resources, finance, legal services, quality assurance and administrative support.

Boye Abdul | Luba Alexandrova | Diane Barker | Mahrez Ben Belfadhel | Ken Birch | Michael Borrelli | Andrew Boushy

Mike Budge | Angelo Castellan | Steve Cavan | Ginni Cheema | Angela Ciccotelli | Sally Clark-Mills



Alejandro Covarrubias | Maryam Dabir | Janet David | Monica Dias | Nicole DiCarlo | Jo-Ann Facella | Kent Feng

Jose Freire-Canosa | Rob Frizzell | Mike Garamszeghy | Gowie Garcia D'Aguanno | Frank Garisto | Stephen George


Paul
Gierszewski


Mark
Gobien


Jessica
Gosbee


Laura
Grant


Vaneet
Gupta


Paul
Hader


Marni
Halter


Daniela
Heimlich


Richard
Heystee


Sarah
Hirschorn


Michael
Hung


Neale
Hunt


Mihaela
Ion


Viva
Isbasoiu


Ivana
Ivanovic


Joanne
Jacyk


Mark
Jensen


Cynthia
Jourdain


Anda
Kalvins


John
Kennard


Laura
Kennell


Atika
Khan


Frank
King


Erik
Kremer


Mike
Krizanc


Gloria
Kwong

Tom Lam

Kitty Lee

Helen Leung

Tiger Liu

Zvonko Lovasic

Lori Lucas

Dylan Luhowy

Peter Maak

Elena Mantagaris

Jennifer McKelvie

Jim McLay

Ellen Meadd

Chantal Medri

Pat Moran

Gillian Morris

Alan Murchison

Ken Nash

Sean O'Dwyer

Kevin Orr

Phyllis Pandovski

Andy Parmenter

Pat Patton

Karen Poon

Ian Pritchard

Jamie Robinson

Sean Russell

Deb Rzeplinski | Maria Sanchez-Rico Castejon | Kelly Sedor | Branko Semec | Kathryn Shaver | Kevin She

Stella Shiv | Peter Simmons | Maria Simone | Wei Song | Ulf Stahmer | Larry Starecky | Eric Sykes

Kevin Tsang | Andres Urrutia-Bustos | John Van Heerden | Jorge Villagran | Andre Vorauer | Ian Walker

Toivo Wanne | Tim Weber | Debbie Williams | Derek Wilson | Marie Wilson | Wendy Yan | Tammy Yang

Absent: Monique Broughton, Althea Goulbourne, Jessica Perritt