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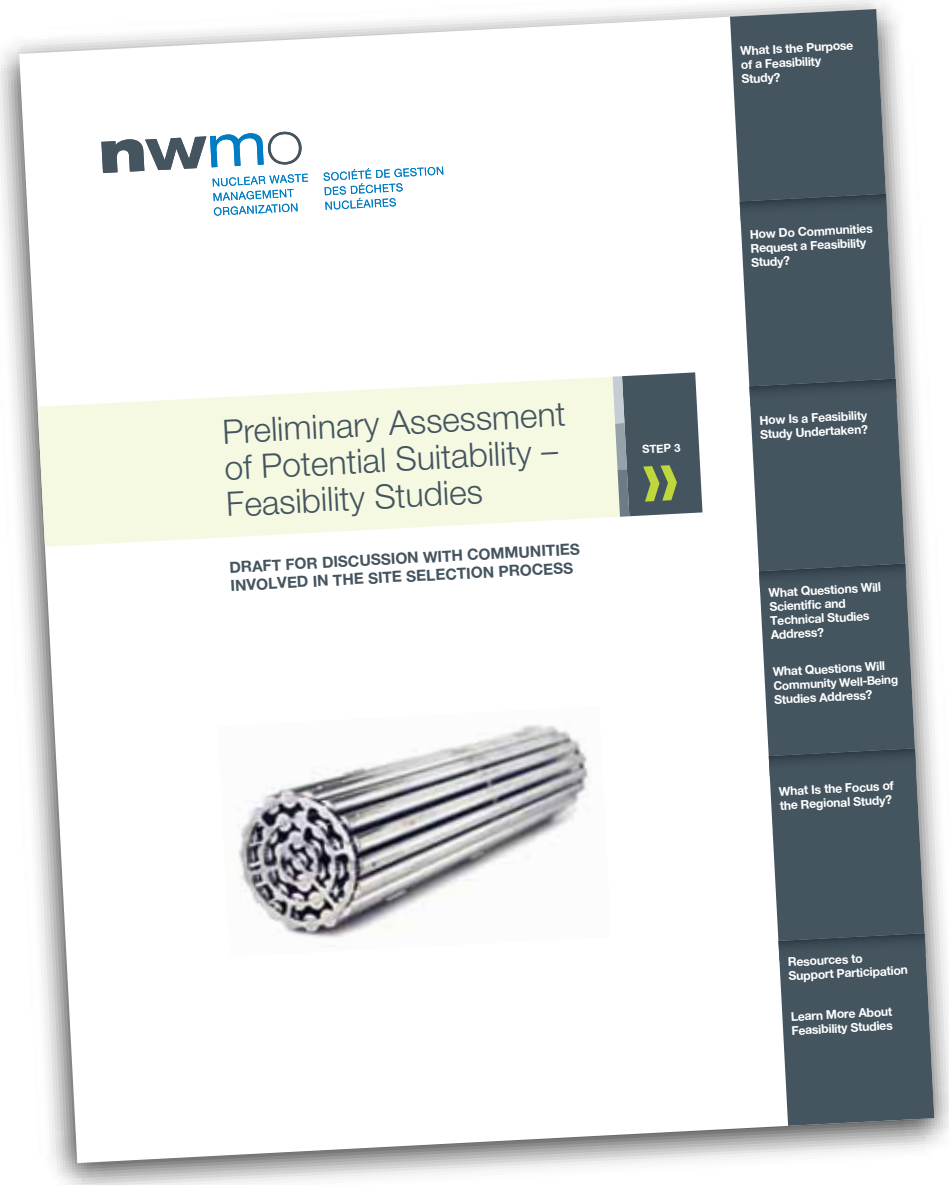
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nwmo news

Nuclear Waste Management Organization

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Learning More Together



The NWMO has been discussing with communities that have completed Step 2 of the site selection process about their interest in moving forward to the next step and what it might look like. Communities themselves decide whether they want to proceed. Step 3 involves feasibility studies designed to assess, in a preliminary way, the suitability of the community and site(s) to host the centralized facilities where used nuclear fuel will be managed over the long term.

Feasibility studies, which will begin in 2012 and could take two years or more to complete, will provide an opportunity for communities and the NWMO to explore key questions that will be important in assessing the suitability of communities for the project. Four key questions related to safety, community well-being, potential community interest and the well-being of surrounding communities will be explored. Some communities with relatively low potential may be screened out during the feasibility studies. By the end of Step 3, the NWMO expects one or two communities may be selected for Step 4 which entails detailed studies over a five-year period.

Meet the NWMO

2011 was a busy travel year for NWMO staff. The organization was invited by communities involved in the site selection process to meet with citizens and share information about Canada's plan for the long-term management of used nuclear fuel and the process to identify an informed and willing community to host the project.

Since March, open-house style sessions were conducted in Pinehouse, English River First Nation, Creighton, Ignace, Ear Falls, Hornepayne, Schreiber, Wawa and Nipigon. The advertised Meet the NWMO events ran over several days in most locations. The public was invited to drop in to review poster boards, an interactive exhibit and videos, and to speak with NWMO specialists and community leaders.

In addition to the main sessions, the NWMO scheduled meetings with interested groups and organizations within each community, and in many instances, with people from surrounding areas, including neighbouring Aboriginal communities.









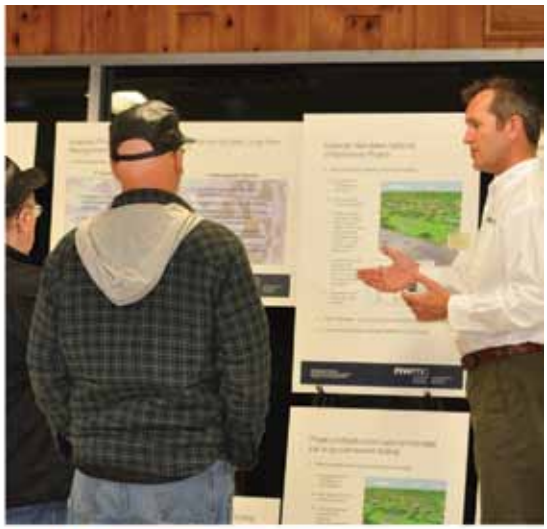
"Most of those we engaged found the information provided helpful," said NWMO Communications Director Jamie Robinson. "They appreciated the opportunity to ask questions and speak directly with NWMO staff."

Attendance at the sessions and associated community meetings varied, but averaged about 10 percent of each community's population.

Some visitors suggested that people who are concerned about the project would have many of their questions and concerns addressed if they were able to see the information provided at the Meet the NWMO sessions and speak with NWMO staff.

"The intention of this early engagement," said Jo-Ann Facella, NWMO Director of Social Research and Dialogue, "was to help communities begin a conversation that will spread beyond those who attended the sessions."









Community leaders often described the long-term management of Canada's used nuclear fuel as an important public policy issue that their community may be in a position to help. They also talked about the project's potential to contribute to the long-term sustainability of their community.

With the exception of Nipigon which recently entered into the process in December, each of the communities had earlier undergone initial screenings that indicated there were no obvious reasons why they could not continue in the site selection process if they choose to do so. Visitors were able to discuss the screening results with NWMO staff and community leaders.

"A key challenge for the NWMO and communities is how to broaden outreach and the sharing of information," she added.

Most visitors were able to meet one-on-one or in small groups with NWMO social, technical and communications staff. Their interests ranged from basic issues like the nature of radiation to more complex questions about the safety of the multiple-barrier system that will be used to contain and isolate used nuclear fuel from people and the environment.

Questions were raised about the impacts that the project will have on a community's way of life, including the future for young people, and on hunting and fishing activities. Some people suggested that Canada should stop creating used nuclear fuel before we proceed with implementing a long-term waste management plan.



Advancing Technical R&D

The Adaptive Phased Management (APM) conceptual design and cost estimate for a deep geological repository and used fuel transportation system was updated in 2011. The APM conceptual design and cost estimate was compared to SKB's cost estimate for a used fuel repository in Sweden and was found to be similar on a per-container basis.

Various work programs are ongoing for APM repository design development including a logistics study, container sizing study, copper coating technology and transportation radiological risk assessment. In 2011, SKB International AB conducted an independent review of our draft design development plan, and provided helpful comments and suggestions for the NWMO's work program to further refine and optimize the APM design. As well, a workshop was held in October with a number of universities and National Research Council Canada representing corrosion, coating and manufacturing technologies including non-destructive examination.

In July, the detailed APM technical program activities for the period 2012 to 2018 were presented to the Independent Technical Review Group (ITRG) for review. The ITRG met with NWMO staff in September to discuss areas of refinements in the APM technical work program objectives, activities and budget over the planning period. The ITRG 2011 Report and recommendations were presented to the NWMO Board of Directors in December. The NWMO is preparing an action plan in response to the ITRG recommendations. The ITRG 2011 Report and the NWMO's action plan will be posted on our website by February 2012.

On the international scene, the NWMO is providing support to the SKB Prototype Repository Retrieval Project in crystalline rock at the Äspö Hard Rock Laboratory in Sweden.

The NWMO also hosted the international Engineered Barrier System Task Force Meeting in Toronto in November. Representatives from Canada, Czech Republic, Finland, Germany, Japan, Korea, Spain, Sweden, Switzerland and the United Kingdom attended the meeting to discuss and compare results from thermal-hydraulic-mechanical modelling of near-field repository systems.

NWMO Participation in the University Network of Excellence in Nuclear Engineering (UNENE)

The UNENE is a not-for-profit corporation founded in 2002. It is an alliance of universities, nuclear power utilities, and research and regulatory agencies, in Canada, for the support and development of nuclear education, and research and development capabilities in Canadian universities. The bulk of the UNENE funding is directed towards Industrial Research Chairs (IRC) and Associate Chairs at McMaster University, Queen's University, the University of Toronto, the University of Waterloo, the University of Western Ontario, the University of Ontario Institute of Technology, and the Royal Military College of Canada.

The NWMO became an associate member of the UNENE in 2011. The NWMO's funding to the UNENE in particular supports education and personnel training activities. The UNENE provides an accredited joint-university programme for a Master of Engineering in Nuclear Engineering. The master's degree is geared to the working professional, where courses are provided via distance learning, as well as during evenings and on weekends.

The UNENE strives towards providing a supply of highly qualified personnel, supporting and funding nuclear research in universities, and creating a respected pool of university-based expertise for independent industry and public consultation. For more information, please visit www.unene.ca.

NWMO and NSERC Sponsor Graduate Student Research

Seven graduate students from Canadian universities presented their research at the 9th Annual NWMO Geoscience Seminar in June 2011. Their research is focused on further demonstrating applied techniques, the development of new methods for site characterization and the assessment of geosphere stability. The NWMO supports six of these students collaboratively with the Natural Sciences and Engineering Research Council (NSERC) through the Industrial Postgraduate Scholarships Program. These students, pictured from left, are Heather Andres (University of Toronto), Ehsan Ghazvinian (Queen's University), Matthew Perras (Queen's University), Emily Henkemans (University of Waterloo), Joe Saso (University of New Brunswick) and Michael Makahnouk (University of Waterloo). In addition, Magda Celejewski (far right, University of New Brunswick) presented her research on the development of a new extraction method for the chemical characterization of pore fluids in low permeability sedimentary rock.



Photo courtesy of Peter Vilks, Atomic Energy of Canada Limited.



NWMO/NSERC-funded PhD candidate Michael Makahnouk assisting with preliminary core logging near Kangerlussuaq, Greenland, as part of the Greenland Analogue Project (2009–2012).

Michael Makahnouk Wins 2011 Peacock Prize

Michael Makahnouk, an NWMO/NSERC (Natural Sciences and Engineering Research Council) Industrial Postgraduate Scholarship award holder, has been awarded the 2011 Peacock Prize. The Peacock Memorial Prize is an award in memory of Dr. M. A. Peacock, who was a professor of crystallography and mineralogy at the University of Toronto, and a founding member of the Walker Mineralogical Club. The Walker Club makes this annual award to a deserving student, engaged in the study of pure or applied mineralogy, including crystallography, petrology or geochemistry, at the graduate level at an Ontario university or college.

Mr. Makahnouk is a PhD candidate in the Department of Earth and Environmental Sciences at the University of Waterloo, under the supervision of Prof. S.K. Frape. His thesis is titled "The Role of Ca in Fluids within Crystalline Rock: Fracture Mineral Investigations using Ca Isotopes."

Shad Valley Receives Funding from NWMO

The Shad Valley program is an intensive one-month university-based development program for high-achieving secondary school students with strong academic records. The four-week program (every July) exposes students to topics of study related to science, engineering, mathematics, technology, business, entrepreneurship and innovation.

Shad Valley integrates many separate streams of subjects and helps students hone their abilities – teamwork, creative problem solving and effective communication are three of the major areas.

Shad Valley has been "designed to specifically meet the long-term recruiting needs of today's globally competitive knowledge-based companies, where highly skilled, entrepreneurial-oriented employees are in high demand."

Approximately 85% of Shad Valley graduates study math, sciences, engineering, medicine and related disciplines at the post-secondary level.

Since 2009, the NWMO has made annual financial contributions to the Shad Valley program for student bursaries to facilitate youth participation from Saskatchewan, Ontario, Quebec and New Brunswick in the Shad Valley summer program. In addition, the NWMO visits and makes presentations at several Shad Valley campuses each year. In 2011, the NWMO visited four campuses (University of Waterloo, McMaster University, Carleton University and Lakehead University) and gave presentations on the long-term management of Canada's used nuclear fuel.



Students at the 2011 University of Waterloo Shad Valley campus, part of more than 500 students who participated in the summer program at 10 Canadian host universities from July 3 to July 29.

NWMO Helps Canadian Students Attend International Science Expo

Through sponsorship of Youth Science Canada, the NWMO helped 44 students from Ontario, Quebec, New Brunswick and Saskatchewan to participate in the 2011 Team Canada-MILSET (the International Movement for Leisure Activities in Science and Technology) Expo-Sciences International held from July 18 to July 23.

This event, which brought together more than 800 young people from over 60 countries to exchange ideas and compare projects, aims to instil a culture of science by fostering networking and international collaboration.

Team Canada won 10 awards at MILSET for a series of excellent science projects.



Team Canada participated in the 13th edition of the MILSET Expo-Sciences International held from July 18 to July 23, 2011.



NWMO booth at the 50th Canada-Wide Science Fair held in Toronto, Ontario, from May 14 to May 21, 2011.

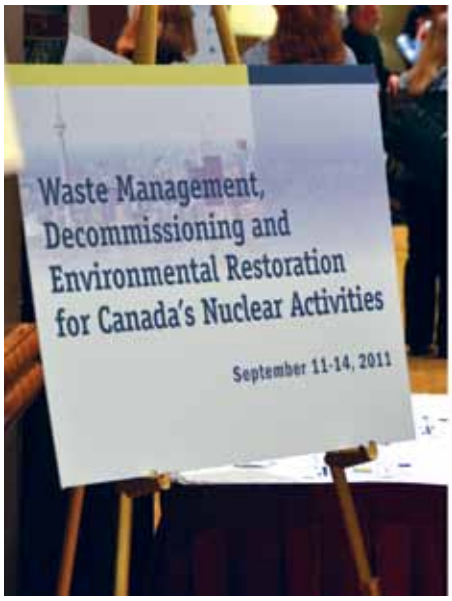
In addition, the NWMO participated in the 2011 Canada-Wide Science Fair organized by Youth Science Canada.

Students from across the country had an opportunity to learn about the long-term management of used nuclear fuel at the NWMO booth.

CNS Conference

The NWMO participated in the conference of the Canadian Nuclear Society (CNS) "Waste Management, Decommissioning and Environmental Restoration for Canada's Nuclear Activities," held at the Toronto Marriott Downtown Eaton Centre Hotel, from September 11 to 14, 2011.

The NWMO also participated in the trade show with its travelling exhibit focused on describing Canada's plan, Adaptive Phased Management, and the NWMO's recent activities to implement this plan. The NWMO invited representatives of communities participating in Canada's site selection process for Adaptive Phased Management to attend the CNS conference.









NWMO presentations covered a wide range of topics, including an overview of the NWMO's work and an update on its work programs; an overview of the process for selecting a site for Canada's deep geological repository for used nuclear fuel; aboriginal engagement; youth engagement; municipal engagement; design development for repository, container and packaging plant for used nuclear fuel; radiation; and glaciation and geosphere evolution.

To see videos of this conference and full presentations, please visit the NWMO website at www.nwmo.ca/sitingprocess_cnsconference.

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NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

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