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Nuclear Waste Management Organization

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## Where the Site Selection Process Is Now

In February, the site selection process reached a new milestone with completion of the last of the initial screenings requested by communities engaged in learning more about Canada's plan for the safe, long-term management of used nuclear fuel. The screening report was presented to Central Huron Municipal Council on February 19.

In total, the NWMO has now conducted 22 initial screenings at the request of communities.

Mahrez Ben Belfadhel, Director of Adaptive Phased Management (APM) Geoscience at the NWMO, explained the purpose of initial screenings: "Their intent was not to confirm the suitability of the communities," he noted, "but rather to provide early feedback on whether there are known technical reasons to exclude them from the site evaluation process. For communities that wish to stay in the process, there are many more years of detailed studies and engagement required to demonstrate and confirm their suitability."

As of June 2013, 20 communities participating in the site selection process have elected to move into Step 3. This step entails increasingly more detailed studies (preliminary assessments) conducted in two phases, and it includes activities to help build understanding of the siting process and project among community members, as well as neighbouring municipalities and Aboriginal communities.

Initial screenings are part of **Step 2** in the nine-step site selection process, and use readily available information to determine whether there are any obvious conditions that would exclude a community from further consideration in the site selection process. There are five screening criteria.

If a community meets all five criteria, it has the option of entering **Step 3**, at which point progressively more detailed studies (preliminary assessments) are undertaken.

### Communities Currently Exploring Their Interest in the Project

- » Arran-Elderslie
- » Blind River
- » Brockton
- » Central Huron
- » Creighton
- » Ear Falls
- » Elliot Lake
- » English River
- » First Nation
- » Hornepayne
- » Huron-Kinloss
- » Ignace
- » Manitouwadge
- » Nipigon
- » The North Shore
- » Pinehouse
- » Saugeen Shores
- » Schreiber
- » South Bruce
- » Spanish
- » Wawa
- » White River

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### Step 3: Phase 1 Studies

All the Phase 1 preliminary assessments underway involve desktop studies. This work includes both social and technical studies. Working with the community, the social studies focus on exploring the potential effect on the long-term well-being of the community if the project were to be sited there. Review of community reports and other publicly available information, and discussions with the community about vision, priorities and objectives are key activities in this work.

At the same time, technical studies explore, in a preliminary way, the potential suitability of the local geology to safely contain and isolate used nuclear fuel. Like all the NWMO's work, Phase 1 technical studies have safety for people and the environment as their primary objective.

Phase 1 studies are proceeding at a pace set by the communities involved. Communities entering Step 3 work with the NWMO to confirm the nature of the work to be completed, the engagement activities that will complement it, and the resources the NWMO will provide to help support participation of the community in the work.

In many communities, local community liaison committees have been playing an active role in involving the community in learning about the project and ensuring that questions about the project are addressed. Many community liaison committees have websites where they share their activities, minutes from their meetings and answers to frequently asked questions. A list of these websites can be found at [www.nwmo.ca/sitingprocess\\_clcwebsites](http://www.nwmo.ca/sitingprocess_clcwebsites).

### Looking Ahead: Phase 2 Studies and Beyond

As Phase 1 studies are completed, they will be used to guide identification of a subset of communities eligible to proceed for further study. If these communities choose, they could then move into Phase 2, which will involve some fieldwork and expanded engagement with the community, surrounding region and Aboriginal people.

By the end of this year, the NWMO expects to complete Phase 1 preliminary assessments in eight communities: Creighton, Ear Falls, English River First Nation, Hornepayne, Ignace, Pinehouse, Schreiber and Wawa. In June, the NWMO met with the mayors of these communities to provide an update on the process and share next steps in the narrowing down process. Phase 1 assessments for communities at earlier stages in the site selection process are expected to be completed in 2014.

Phase 2 is a continued period of study and learning, with the NWMO working collaboratively with the community and those potentially affected by the project to explore the potential suitability of the community and sites.

The greater detail of Phase 2 studies, in turn, will further narrow the number of potential communities, probably to one or two. These remaining communities, if they continue to be interested, would be the focus of multi-year work that will take place in Step 4, including extensive community and regional engagement, and detailed characterization of potential sites.

Any decision on a preferred site is at least seven to 10 years in the future. Only when all this work is completed would a community be asked to demonstrate its willingness to host the project at a grassroots level and in a compelling way before the site selection process can proceed.

## The NWMO Launches a Mobile Transportation Exhibit



The NWMO's new mobile transportation exhibit.

The NWMO introduced a new mobile transportation exhibit in April. The exhibit provides a hands-on opportunity to learn more about plans for the safe and secure transportation of Canada's used nuclear fuel.

Safety is built into every element of the transportation system, beginning with the transport container. It is specifically designed to protect the public by withstanding severe accident conditions. It is made of a solid stainless steel box with walls nearly 30 centimetres thick, a lid attached by 32 bolts, and an impact limiter. When loaded with 192 used CANDU fuel bundles, it weighs almost 35 tonnes.

"The transport package is incredibly robust," explained Chris Hatton, the NWMO's Director of Repository Design Development. "Only after it has been shown to withstand fire, immersion, a free drop, and puncturing will the Canadian Nuclear Safety Commission certify it for transporting used nuclear fuel."

The mobile transportation exhibit made its debut at the Northwestern Ontario Municipal Association's conference in April. Among the people who toured the exhibit were members of the Ignace

Community Nuclear Liaison Committee and that township's mayor, Lee Kennard.

"The whole transportation exhibit was very good at demonstrating the rigorous safety and security requirements and the comprehensive planning that is involved," said the Mayor. "Seeing the trailer and containers up close reinforces my confidence that the public and the environment will be well-protected."

The transportation of used nuclear fuel is a stringently regulated activity involving both Transport Canada and the Canadian

Nuclear Safety Commission (CNSC). The transportation package is designed to meet a series of challenging performance requirements specified by the CNSC and based on international standards developed by the International Atomic Energy Agency (IAEA). It must undergo a series of severe tests to ensure its radioactive contents are not released.

Trailers to haul used nuclear fuel containers are specially designed for the purpose, and include secure tie downs and anti-sway and anti-roll features. The tractor pulling the unit has numerous safety features, including a digital survey meter to detect any leaks, a shutdown switch, and sophisticated communications and tracking equipment to keep in constant contact with a control centre. Drivers must have an excellent safe driving record and will be highly trained. Emergency response and security plans are an important part of the overall transportation plan.

As part of Canada's plan for the safe, long-term care of used nuclear fuel, shipments of used fuel from interim storage sites to a repository would not begin until 2035 at the earliest.

To learn more about transportation of used nuclear fuel, go to *Safe and Secure Transportation of Canada's Used Nuclear Fuel* at [www.nwmo.ca/brochures](http://www.nwmo.ca/brochures).



Ken Nash, President and CEO of the NWMO, gets a first-hand look at a used fuel transportation package featured on the NWMO's newest exhibit. Behind him is the impact limiter that goes on top of the lid.

## Pre-Project Report Submitted to the Canadian Nuclear Safety Commission

The NWMO has prepared a pre-project report that illustrates its approach to conducting a safety assessment for a conceptual used fuel repository within a hypothetical crystalline rock setting in the Canadian Shield.

The report is available online at [http://www.nwmo.ca/uploads/File/NWMO-TR-2012-16\\_4CS-Pre-project-Report\\_FinalforWebsite.pdf](http://www.nwmo.ca/uploads/File/NWMO-TR-2012-16_4CS-Pre-project-Report_FinalforWebsite.pdf).

In December 2012, the NWMO submitted the report to the Canadian Nuclear Safety Commission (CNSC) for review.

The report builds on the series of postclosure safety assessments

for a deep geological repository in a hypothetical crystalline setting in Canada, and includes an example of a conceptual repository design at a hypothetical site and safety assessment methods. Its purpose is to show how the illustrative postclosure safety assessment approach is consistent with CNSC guidance outlined in the CNSC Guide G-320 (*Assessing the Long Term Safety of Radioactive Waste Management*).

The NWMO will also be developing postclosure safety assessments for a hypothetical used fuel repository in a sedimentary rock setting.

## New! The NWMO's Annual Report for 2012 and Implementation Plan for 2013 to 2017

In March, the NWMO submitted its Annual Report for 2012 (*Learning More Together*) to the Honourable Joe Oliver, Minister of Natural Resources Canada.



Also in March, the NWMO released its strategic plan for the next five years: *Implementing Adaptive Phased Management 2013 to 2017*. The plan presents our work program in seven key areas and highlights proposed activities to support continued progress. As in previous years, the plan was refined based on comments and ideas received from a draft submitted to the public. Our progress in 2013 against the seven objectives will be described in the Triennial Report to be published in March 2014.



Both publications are available on our website at [www.nwmo.ca](http://www.nwmo.ca).

## Going Local: NWMO Employees Participate in Community Events



The NWMO participated in the Hornepayne Winter Festival Fish Derby at Cedar Point Lake in February. NWMO Regional Communications Manager Patrick Dolcetti was on hand to help organizers with everything from drilling fishing holes to serving hot chocolate. More than 70 people came out to enjoy the annual family event, despite chilling temperatures of -30 degrees Celsius. "The organizers tell me it's their favourite event of the year, and after being there, I can see why," Pat said. "The people were just great! It was a pleasure to be a part of it." Hornepayne, located in northern Ontario, is one of 21 communities engaged in learning more about Canada's plan for the safe, long-term management of used nuclear fuel.



Cynthia Jourdain, an NWMO Engagement Officer in Aboriginal Relations, discusses Canada's Aboriginal heritage and traditions with a third-grade class at Charlottetown Public School in Scarborough, Ontario. The presentation, which took place in January, complemented the school's Native Studies program. "I am not just an employee of the NWMO," Cynthia explained. "I'm also an ambassador of my people and am always proud to share the knowledge I might carry. It is the greatest honour to be asked to share Ojibwe teachings with others, but I especially felt honoured to share with children. I shared teachings about my jingle dress and demonstrated the dances associated with the dress. We ended the session with a round dance in the spirit of friendship."

# Encouraging Youth Involvement in Science



Jennifer McKelvie of the NWMO presents Josie Mielhausen of Team Bluewater CWSF 2013 with the Best of the Fair Award at the Bluewater Regional Science and Technology Senior/Intermediate Fair. Josie is a Grade 12 student at the Bruce Peninsula District School in Lion's Head, Ontario.

The NWMO's Corporate Social Responsibility Program funds programs that encourage elementary and high-school students to learn more about science. Each province and region involved in the NWMO siting process has access to different science programs, and the NWMO is pleased to help youth gain access to these learning opportunities.

For all four provinces involved in the NWMO siting process, the NWMO will once again support Shad Valley in the form of bursaries to students from Ontario, Saskatchewan, New Brunswick and Quebec. Shad Valley is a four-week summer enrichment program for high-achieving secondary school students with strong academic records. Held on campuses throughout Canada, the program features workshops and lectures

that focus on the sciences, engineering, technology and entrepreneurship. The NWMO has provided support for this program since 2009 and is pleased to confirm ongoing funding in 2013.

For each of its potential siting areas, the NWMO also supports youth participation in regional science fairs organized by Youth Science Canada. The program encourages Canadian youth to get involved in science by developing scientific and technological knowledge and skills through project-based science. Funding supports transportation costs for youth from siting communities to attend regional science fairs, and subsidizes registration fees for students in the region whose projects qualify for the upcoming Canada-Wide Science Fair. NWMO support helps Youth Science Canada fund seven regional science fairs – five



in Ontario, and two in Saskatchewan, including the Saskatchewan First Nations science fair. NWMO support in 2013 will continue to build on a range of Youth Science Canada program activities that the NWMO has supported since 2008.

The NWMO continues to identify opportunities to support classroom-based science education. One such initiative is the Science North School Outreach Program for communities in northern Ontario. The NWMO became a sponsor in 2012, with funding going to schools in communities participating in the site selection process. The emphasis is on interactive hands-on learning. Topics include animal adaptation to their habitat,

the properties of light, healthy eating, and cellular biology. The NWMO is pleased to continue sponsoring this program in 2013, and has confirmed additional funds to expand the outreach to include schools in Aboriginal communities in potential siting regions.

Earlier this year, the NWMO also agreed to provide funding for Scientists in Schools, an organization that provides classroom-based science education in southern Ontario. NWMO funding will be focused on schools in the communities of Brockton, Saugeen Shores, Huron-Kinloss, South Bruce, Arran-Elderslie and Central Huron.



In addition to sponsoring science fairs in the communities and regions involved in the siting process, NWMO employees and their families also look for opportunities to volunteer their expertise to support youth in science. For example, NWMO employees and their families volunteered as judges at the 2013 Toronto Science Fair at the University of Toronto Scarborough on April 6. The Toronto Science Fair program encourages kindergarten to Grade 12 students to undertake genuine scientific inquiry and technological innovation. Pictured from left: Ulf Stahmer, Kelly Liberda, Jennifer McKelvie and Jonathan Liberda.

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