WHAT'S INSIDE

1 » Date Set for Suspension of Expressions of Interest

3 » Advancing Technical R&D

4 » 2012 Toronto Science Fair
» Graduate Student Research – Magda Celejewski, University of New Brunswick

nwmo news

Nuclear Waste Management Organization VOLUME 10, ISSUE 2 MARCH 2012

Date Set for Suspension of Expressions of Interest

The NWMO announces date for suspension of expressions of interest for new communities wishing to engage in the site selection process for Canada's Used Nuclear Fuel Repository and Centre of Expertise

In May 2010, the NWMO initiated a site selection process for Canada's Used Nuclear Fuel Repository and Centre of Expertise for the long-term management of Canada's used nuclear fuel in an informed and willing host community. The nine-step process to select a site will take 10 years or more to complete, and begins with a community expressing interest in learning more about the project, the NWMO and the site selection process. Interested communities are the focus of a progressively more detailed set of scientific, technical and community well-being studies, and phases of learning to assess the suitability of the community for the project. Communities may leave the site selection process at any time up until the signing of a final agreement, which is still many years in the future. An expression of interest by a community triggers a process of broad outreach and discussion of the project with neighbouring communities and potentially affected Aboriginal peoples.

To date, a number of communities have expressed interest in learning more about the project, the NWMO and the site selection process. At this time, 15 communities are actively engaged in the site selection process, including several that have asked the NWMO to begin more detailed preliminary assessment studies (Step 3). As well, a number of other communities have requested information and briefings and are considering participating in the site selection process.

The NWMO is planning to suspend the expressions of interest phase of the site selection process on September 30, 2012. New expressions of interest will not be considered after this date. This will allow the NWMO to focus its efforts on conducting the detailed studies required in communities that have expressed an interest to date, or that express interest on or before the closing date. It will also help the NWMO plan for and fully support the engagement of surrounding communities and potentially affected Aboriginal peoples, which is initiated with the entrance of a new community to the siting process. Expressions of interest by new communities must be supported by a resolution of Council, or equivalent, and may take the following forms: request for an NWMO briefing to learn about the project and the site selection process; or request for an initial screening of the potential suitability of the community for the project.

The suspension of the expressions of interest phase of the site selection process is intended to help ensure that the best knowledge and expertise are brought to each of the studies that are conducted. It is also intended to ensure that the communities involved in the site selection process continue to be fully supported by the NWMO in their exploration of the project and are informed, as early as possible, whether they are among the short list of strong candidates for the project. The suspension of the expressions of interest phase will also help the NWMO plan for and fully support the involvement of surrounding communities. It will be important for the NWMO to engage potentially affected Aboriginal peoples to understand and fully respect their Aboriginal and Treaty rights and how Aboriginal Traditional Knowledge can be applied.

The NWMO is optimistic that the studies that have been initiated, or that will be initiated with communities that express interest on or before September 30, 2012, will identify viable options for implementing this project. However, until this work has been completed, the outcome of these studies is uncertain, and it may be necessary to study other communities and sites as potential hosts for this project in the future. The NWMO, therefore, reserves the option of reopening the process to expressions of interest by new communities in the future.

Key Questions

What is the Site Selection Process for Canada's Used Nuclear Fuel Repository and Centre of Expertise?

In May 2010, the NWMO initiated a site selection process for Canada's Used Nuclear Fuel Repository and Centre of Expertise. The site selection process for this national infrastructure project was developed through dialogue with Canadians to ensure that the site which is selected is in an informed and willing community, and is safe and secure for people and the environment now and in the future. The process involves nine steps that will take 10 years or more to complete, and begins with a community expressing interest in learning more about the project, the NWMO and the site selection process. Once communities have entered the process, several phases of learning and progressively more detailed studies begin to assess the suitability of the community and specific sites for the project. Communities that enter the site selection process may leave the process at any time up until the signing of a final agreement, which is still many years in the future.

The site selection process is designed to ensure:

- Any community that is selected to host this facility is both informed about the project and willing to host it;
- Any site that is selected to host this facility will safely contain and isolate used nuclear fuel for a very long period of time, in an appropriate geological formation, and that there is an acceptable way of transporting used fuel to the site;
- Any interested host community carefully and thoroughly considers the project's potential benefits and risks when deciding whether to express interest, and ultimately, willingness to host the project;
- Involvement of surrounding communities, regions and other jurisdictional levels potentially affected by the project and the transportation of used fuel in the assessment and planning of the project;
- Involvement of First Nations, Métis and Inuit who will be potentially affected by the implementation of the project; and
- An ongoing conversation on questions to be answered and issues to be addressed throughout the site selection process.

How have communities been involved to date?

Since May 2010, the site selection process has been open to all communities that are interested in learning more about Canada's plan for the long-term management of used nuclear fuel, the NWMO and the site selection process. During this expression of interest phase, a number of communities have expressed interest in learning more. At this time, 15 communities are actively engaged in the site selection process: Blind River, Brockton, Ear Falls, Elliot Lake, Hornepayne, Ignace, Nipigon, North Shore, Schreiber, South Bruce, Spanish and Wawa in Ontario; and Creighton, English River First Nation and Pinehouse in Saskatchewan. As well, a number of communities have requested information and briefings, and are considering their interest in participating in the site selection process.

Communities that successfully pass an initial screening of the potential suitability of the community for the project must then decide whether they wish to proceed to more detailed preliminary assessment studies and broad engagement (Step 3). A number of communities have already expressed interest in proceeding to this next step. In response to this interest, the NWMO has launched the next phase of the site selection process with the initiation of preliminary assessment studies with interested communities that have successfully passed an initial screening.



Why is the NWMO planning to suspend the expressions of interest phase of the site selection process?

The NWMO is now planning to suspend the expressions of interest phase of the site selection process in order to focus its efforts on conducting the detailed studies required in communities that express an interest on or before September 30, 2012.

The suspension of the expressions of interest phase of the site selection process is intended to help ensure that the best knowledge and expertise are brought to each of the studies that are conducted. It is also intended to ensure that the communities involved in the site selection process continue to be fully supported by the NWMO in their exploration of the project and are informed, as early as possible, whether they are among the short list of strong candidates for the project. The suspension of the expressions of interest phase will also help the NWMO plan for and fully support the involvement of surrounding communities and potentially affected Aboriginal peoples.

The NWMO respects and is greatly appreciative of the professionalism of the communities that have involved themselves in the site selection process to date, the efforts they have made to learn about and consider this project, and the leadership they have shown in exploring the role they might play in this important national infrastructure project designed to protect people and the environment today and for future generations. The NWMO looks forward to working with these communities and other communities which may come forward in the next few months.

Until what date will new expressions of interest be received?

New expressions of interest will be received on or before September 30, 2012. New expressions of interest, supported by a resolution of Council or equivalent, may take the following forms: request for an NWMO briefing to learn more about the project and the site selection process; or request for an initial screening of the potential suitability of the community for the project.

The potential suitability of a community for this project will be assessed through progressively more detailed scientific, technical and community well-being studies. These studies are designed to ensure that there is a site with geology that can safely contain and isolate used nuclear fuel for the long periods of time for which it remains hazardous, and that the project can be implemented in a way that fosters the well-being of the local community and region. Broad awareness building, learning and engagement of community members, surrounding communities and Aboriginal peoples is an important component of the site selection process.

The NWMO is optimistic that the studies that have been initiated, or that will be initiated with communities that express interest on or before September 30, 2012, will identify viable options for implementing this project. However, until all work has been completed, the outcome of these studies is uncertain, and it may be necessary to study other communities and sites as potential hosts for this project in the future. The NWMO, therefore, reserves the option of reopening the process to expressions of interest by new communities in the future.

Will the NWMO continue to provide information to new interested communities after September 30, 2012?

Yes. The NWMO has committed to providing information, regular updates and briefings upon request to communities and others that are interested, throughout the site selection process. However, no additional screenings or preliminary assessment studies will be initiated with communities that express interest after September 30, 2012, during the suspension.

Advancing Technical R&D

Work progresses on repository design development. Among the projects currently underway is a logistics study investigating methods and associated costs for transferring used fuel from reactor sites to the repository facility. In a separate analysis of the transportation container that will be used, radiological dose values were found to be well within legal limits. To make sure that the exposure is as low as reasonably achievable (ALARA), the NWMO is reviewing the package's design to further improve its neutron shielding performance.

Work on copper coatings for containers has advanced to the stage of screening tests of different copper-coated samples. The goal is to test their resistance to corrosion. At the same time, researchers at the University of Toronto are testing the coatings' performance in the sorts of highly saline environments that occur in sedimentary rock formations in southern Ontario. Other work on container technologies includes tests of wrought steel and welded steel. These samples are being tested at the Mont Terri rock laboratory in Switzerland.

To design the right type of closure weld for repository containers, NWMO researchers are working with welding engineers at Rolls Royce, Babcock & Wilcox, Nutech Engineering, and the National Research Council Canada. As part of the finalization of the repository container design, work is also underway with Babcock & Wilcox on a cost comparison of different sizes of containers.

(continues on page 4)

(continued from page 3)

The Technical Program has also completed a design development plan for work to be undertaken between now and 2018 on designing a deep geological repository. The plan incorporates the comments of two independent reviews – one by SKB International, the other by the Independent Technical Review Group (ITRG) that conducts annual reviews of the NWMO's Technical Program.

The ITRG's most recent recommendations, presented in December 2011, were posted on the NWMO website in February 2012, along with an action plan that addresses those recommendations.

2012 Toronto Science Fair

NWMO staff members volunteered as judges at the 2012 Toronto Science Fair at the University of Toronto Scarborough on March 31. The Toronto Science Fair program encourages Kindergarten to Grade 12 students to undertake genuine scientific inquiry and technological innovation. This year's Science Fair included 349 students from 64 schools.



NWMO staff members and their families participated at the 2012 Toronto Science Fair. From left: Jonathan Liberda, Kelly Liberda, Jennifer McKelvie, Neale Hunt, Ulf Stahmer and Quinn Stahmer.

Top students from the Toronto Science Fair are awarded an opportunity to participate at the Canada-Wide Science Fair (CWSF) in Prince Edward Island for a week in May 2012. The NWMO will have a booth at the CWSF and is a Presenting Sponsor for Bronze Excellence Awards, for which 40 medals will be awarded in each category, for a total of 120 medals.

Graduate Student Research – Magda Celejewski, University of New Brunswick



University of New Brunswick Ph.D. Candidate Magda Celejewski calibrates a near infrared (NIR) spectrometer to determine the mass of water extracted onto filter papers from low porosity rock cores.

Chemical and stable isotopic compositions of matrix porewaters provide information on the origin and evolution of deep-seated groundwater systems over geologic time frames. The characterization of porewater compositions in the low permeability and low porosity rock typically sought to host a deep geological repository is challenging since the small amounts of water present are held tightly by the rock matrix. As such, the NWMO is exploring with Canadian universities and other international programs the development and application of laboratory techniques to extract and characterize matrix porewaters.

As part of this program, the NWMO is funding Ms. Magda Celejewski's research on "Porewater Extraction from Low Permeability Sedimentary Rocks" with Professor Tom Al in the Department of Earth Sciences, University of New Brunswick. Ms. Celejewski's research is developing an innovative experimental technique that uses capillary action to extract small quantities of porewater into absorbent, low chemical-background papers sandwiched between rock core segments. Ms. Celejewski will present the progress of her research this June at the 22nd Goldschmidt Conference in Montreal.

nwmo
NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

For more information, please contact:
Jamie Robinson Director, Communications
Tel 647.259.3012 Fax 647.259.3007
Email jrobinson@nwmo.ca

Nuclear Waste Management Organization
22 St. Clair Avenue East, Sixth Floor
Toronto, Ontario M4T 2S3 Canada
Tel 416.934.9814 Toll Free 1.866.249.6966
www.nwmo.ca