Process for Selecting a Site for Canada's Deep Geological Repository for Used Nuclear Fuel

Presentation to: Canadian Nuclear Society

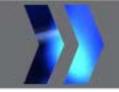
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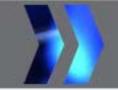
nwmo

NUCLEAR WASTE MANAGEMENT ORGANIZATION SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

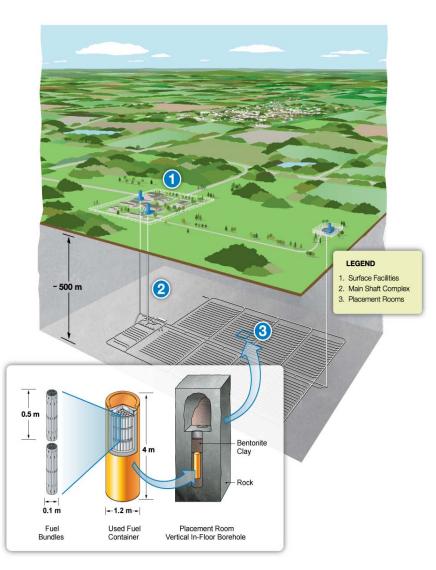


- » 2002: Nuclear Fuel Waste Act required formation of the NWMO
- » NWMO Mission statement: The purpose of the NWMO is to develop and implement collaboratively with Canadians, a management approach for the long-term care of Canada's used nuclear fuel that is socially acceptable, technically sound, environmentally responsible and economically feasible
- » NWMO is a corporation that operates as a not-for-profit organization
- » Funded by nuclear waste owners (Ontario Power Generation, Hydro-Québec, New Brunswick Power, Atomic Energy of Canada Limited); trust funds in place

Federally Mandated National Infrastructure Project



- » High technology, national infrastructure project
 - Investment of \$16-24 billion (dedicated funding)
 - Will operate as centre of expertise
 - Project requires dedicated surface area of ~100 hectares (250 acres) and subsurface area of ~2.5km x 1.5km (375 hectares/930 acres)
 - Project development, operations and monitoring for more than 100 years



Road Map for Selecting a Site

- » Site selection process collaboratively developed over 2 years through dialogue with Canadians
- » Process initiated May 2010

GUIDING PRINCIPLES

- Focus on safety.
- Informed and willing host community.
- Long-term well-being of host community.
- Involve those who are potentially affected.
- Respect Aboriginal rights, treaties and land claims.

PROTECTING PEOPLE AND THE ENVIRONMENT

Detailed scientific and technical investigations will ensure the site is safe:

- The rock at the site must be appropriate.
- A safe and secure transportation route.

FOSTERING COMMUNITY WELL-BEING

Economic health; the environment; safety and security; cultural dimensions; spiritual dimensions; social conditions; enhancing opportunities for people and communities.

PARTNERSHIP AND COMMUNITY SUPPORT

- Long-term partnership with the community and region.
- Resources provided to: learn more; seek expert advice; involve citizens in decision-making; involve neighbouring communities, region and Aboriginal peoples.

Steps in the Site Selection Process



Step 1 Becoming aware & informed	Steps 2, 3 & 4 Assessing interest & suitability • Community visioning • Screening • Feasibility • Detailed assessment • Regional study & involvement		Step 5 Community assesses & demonstrates willingness
Step 6 Preferred site identified • Collaborative agreement established	Step 7 Regulatory review & approvals • Site is selected	Step 8 National centre of expertise establish & construction of underground demonstration faci	

Technical Site Evaluation Process

- » Ensure technical safety to protect humans and the environment, now and in the future
- Progressive and thorough technical site evaluation process (7-10 years)
- » Comprehensive technical site evaluation criteria
- » Evaluation process and results are subject to third-party reviews

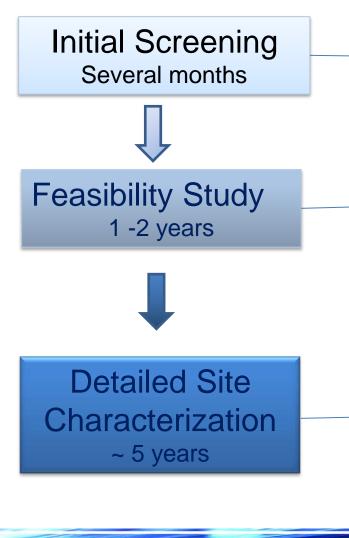




Main Site Evaluation Stages



Site evaluation process is driven by community's interest to participate:



Desktop studies to evaluate the potential suitability of the community against a list of initial screening criteria

Desktop studies to determine whether a site in the community has the potential to meet the detailed requirements for the project (possibility of limited field work):

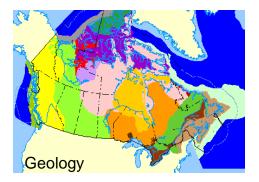
- Technical evaluation
- Social, economic and cultural assessment (community well-being)

Detailed field investigations at one or two sites to <u>confirm</u> suitability of the site based on detailed site evaluation criteria:

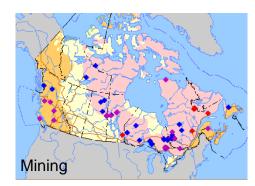
- Technical evaluation (detailed field investigations).
- Continue social, economic and cultural assessment
- Regional study

Initial Screening Criteria

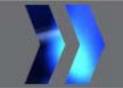
- » Enough land to accommodate surface and underground facilities
- » Outside protected areas, heritage sites, provincial/national parks
- » Land must not contain groundwater resources at repository depth
- » Land must not contain known economically exploitable natural resources
- » Land must not be located in areas with known geological and hydrogeological features that prevent site from being safe











Suitable sites must satisfy six safety functions

- 1. Safe containment and isolation of used nuclear fuel
- 2. Long-term resilience to future geological processes and climate change
- 3. Isolation of used fuel from future human activities
- 4. Amenable to site characterization and data interpretation activities
- 5. Safe construction, operation and closure of the repository
- 6. Safe and secure transportation routes

Communities currently interested in learning more



Interested Communities in Canada

Status of Initial Screenings

Objective

» Assess whether there are any obvious conditions that would exclude a community from NWMO site selection process based on readily available information

Status

- » Nine communities expressed interest in learning more about NWMO site selection process and requested an initial screening
- » All these communities are located on crystalline rocks of the Canadian Shield
- » Eight initial screenings completed

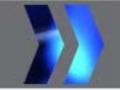
Results

- » Seven communities passed the initial screening stage
- » One community did not meet the screening criteria
- » One screening still in progress

Next Steps



- » Begin feasibility studies early in 2012 for communities interested in continuing in the process, without obligation
- » Communities decide whether or not they wish to participate in the feasibility study phase
- Interested communities and NWMO agree on path forward for feasibility study phase, including:
 - Scope of feasibility study
 - How NWMO and community will work together
 - How community members will be engaged
 - Outreach to surrounding communities, Aboriginal peoples and region.



Thank you!

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