

Canada's Plan for the Long-Term Management of Used Nuclear Fuel



Canadian Nuclear Society Conference

Waste Management, Decommissioning and
Environmental Restoration for
Canada's Nuclear Activities

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nwmo

NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

History of Long-Term Management of Used Fuel Programs



- » **1978** Porter Commission on Electricity Planning in Ontario
- » **1980** Atomic Energy Canada Limited assigned responsibility for developing geological disposal
- » **1989** Concept of geological disposal referred to an Environmental Assessment Panel
- » **1998** Panel reports findings
 - Geological disposal technically safe
 - Public acceptance not demonstrated
- » **2002** *Nuclear Fuel Waste Act* requires NWMO be formed

2002 Nuclear Fuel Waste Act

» **Nuclear Energy Corporations to:**

- Form and fund NWMO
- Contribute to trust funds

» **NWMO**

- Conduct study of alternatives and make recommendation
- Implement government decision
- Report annually to parliament

» **Government of Canada**

- Approves NWMO recommendation
- Approves trust fund contributions



Progress Since 2002

- » **2002** NWMO established and study initiated
- » **2005** Adaptive Phased Management recommended to Government
- » **2007** Government accepts NWMO recommendation
- » **2008** NWMO issues implementation plan
- » **2010** NWMO initiates site selection



NWMO Study of Alternatives (2002-2005)

- » NWMO three-year nation-wide study:
 - ◆ 18,000 Canadians including 2500 Aboriginal people
 - ◆ 120 information & discussion sessions
 - ◆ Contributions from 500 experts

- » Canadians told us:
 - ◆ Safety and security is top priority
 - ◆ Take action now
 - ◆ International standards
 - ◆ Approach must be adaptable



Adaptive Phased Management: Canada's Plan for the Long-Term Management of Used Nuclear Fuel

APM emerged from dialogue with citizens and experts – best met key priorities

A Technical Method

- » Centralized containment and isolation of used nuclear fuel in deep geological repository
- » Continuous monitoring
- » Potential for retrievability
- » Optional step of shallow underground storage

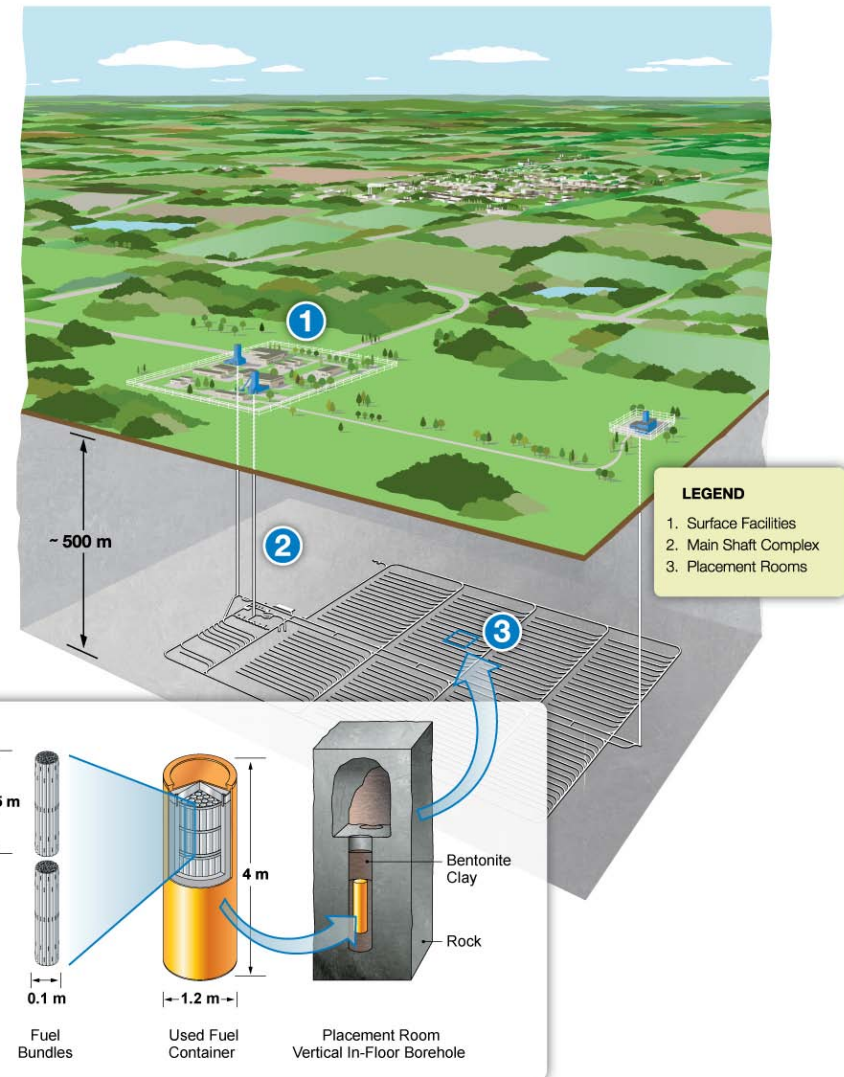
A Management System

- » Flexibility in pace and manner of implementation
- » Phased and adaptive decision-making
- » Responsive to advances in technology, research, Aboriginal Traditional Knowledge, societal values
- » Open, inclusive, fair siting process - seek informed, willing host community
- » Sustained engagement of people and communities throughout implementation

APM approved by Federal government June 2007

National Infrastructure Project

- » **High technology, deep geological repository**
 - Investment of \$16-24 billion (2010)
 - Will operate as centre of expertise
 - Sustainable over more than 100 years
- » **Long-term partnership between NWMO and community**
- » **Fosters community well-being**
- » **Strongly regulated**

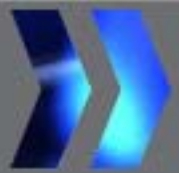


2011-2015 Implementation Plan



- » Build long-term relationships
- » Further develop repository designs and safety cases
- » Implement collaboratively the process for siting a repository
- » Ensure funds are available
- » Adapt plans in response to new knowledge
- » Maintain an accountable governance structure
- » Build and sustain an effective organization

Building Relationships and Involving Canadians in Decision Making

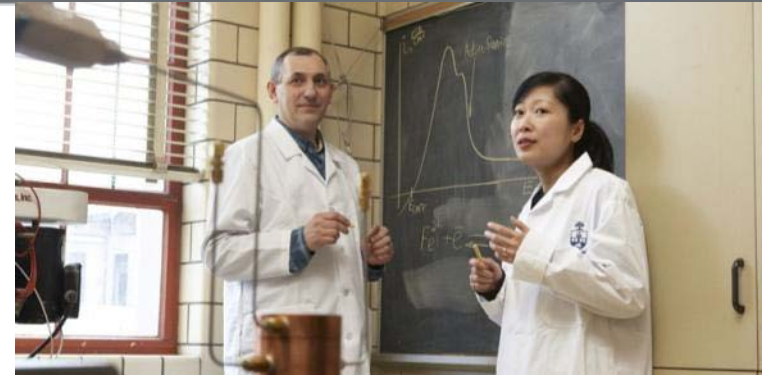


- » A forum of Aboriginal Elders from across Canada
- » Projects with National and Provincial Aboriginal organizations
- » A forum of Municipal Associations
- » Frequent dialogues with reactor communities
- » A diversity of engagement methods
 - Multi-party dialogues
 - Citizen and government round tables
 - Dialogues led by Aboriginal organizations
 - Public information sessions and briefings
- » Ongoing Provincial and Federal briefings



Technical Development Program

- » Pre-project review of reference designs
- » Continued research to improve designs and confidence
- » Repository container and transfer system
- » Geological site evaluation and characterization





- » **Two years to collaboratively design site selection process**
- » **Expectations of Canadians for site selection process:**
 - Safety first
 - Need for this generation to take action
 - Informed and willing host
 - Commitment to community well being
 - Fair, inclusive and transparent process involving all those that may be affected
- » **Initiated site selection process in May 2010**

Communities Involved in Learning More



Timelines

