

A brief history of the Nuclear Waste Issue in Northwest Ontario

In The “optimistic” 1950’s and 1960’s

- 1952 The federal government founded a new crown corporation, Atomic Energy of Canada (AECL).
- 1964 Ontario Hydro announced plans to build the Pickering nuclear station. Construction began in 1966. Construction began at Bruce in 1977 and at Darlington in 1981. Slogan of the day “electricity too cheap to meter”

In the 1970’s ... what about the waste?

- 1977 The Hare Report – 63 page booklet

In 1977, a report was commissioned by the Department of Energy, Mines and Resources to provide the government and the public with the views of an independent expert group on the subject of nuclear waste disposal. The Chairman was Dr. Kenneth Hare, who commented that 4 months was too short a time to review all technical details but nevertheless felt they were able to make significant recommendations.

They made 19 conclusions and recommendations including:

1. There are good prospects for the safe, permanent disposal of reactor wastes and irradiated fuel, and we see no reason why the disposal problem need delay the country’s nuclear power program provided that the government proceeds immediately to the program of research and development in the following recommendations.
2. From a carefully selected repository, with suitable immobilization techniques, it will be at least many centuries before such released radionuclide’s would reach the surface, and then in great dilution.
3. If, nevertheless, radionuclide’s do reach the surface, they will be incorporated into soil, water, streams and lakes, They will run through the ecosystems like other soluble nutrients and may be locally reconcentrated by organisms. However, the dilution will be so great that they will not enter food chains in any appreciable quantities.

In Dr. Hare’s discussion:

A decision to locate the repository in central or northern Ontario, however, may be resisted by local populations, environmentalists, conservationists, wildlife specialists and the recreation industry. In some areas it may also be opposed by native people’s organizations. “Why should we accept noxious wastes that arise from the demands of city-folk down south?” This familiar cry will be raised wherever in northern areas the repository is finally placed. But there are extensive areas of crown land that are not peopled at all, except for temporary settlement..... The final sentence in the report: “The paramount consideration must be to pick a site that will not fail.”

The Select Committee on Ontario Hydro Affairs was established by the Legislative Assembly of the Province of Ontario on November 24, 1977 to report on a wide range of matters relating to the activities of Ontario Hydro including Ontario’s nuclear commitment.

- 1978 A joint statement by the governments of Canada and Ontario directs AECL to develop concept of deep geological disposal. The Federal government asked the Standing Committee on National Resources and Public Works to hold hearings on the Hare report. They called for briefs to be submitted from interested parties. Two of these briefs were as follows:

“Nuclear Wastes – what, me worry?” A Critique of “The Management of Canada’s Nuclear Wasters” [EMR Report EP77-6, the Hare Report] from the Canadian Coalition for Nuclear Responsibility, Gordon Edwards, Chairman, prepared for the House of Commons’ Standing Committee on National Resources and Public Works, February 1978

“An Assessment of the Management of Canada’s Nuclear Wastes (The Hare Report)” prepared by Graham Saunders of the Citizen’s Committee Studying Nuclear Waste (CCSNW) with Environment North Submission to the Standing Committee on National Resources and Public Works.

Atikokan

In the spring of 1978, presentations were made to Atikokan township council on Nuclear Waste Disposal Program by Ontario Hydro and again by AECL. In July, Atikokan township council passes resolution asking the federal Minister of Energy, Mines and Resources to direct AECL to do test drilling near Atikokan to find out if rock were suitable for waste disposal.

“Nuclear Wastes – A Sleeping Giant”, a presentation to the Select Committee on Ontario Hydro Affairs by Gordon Edwards, October 12, 1978.

In November, four Atikokan residents organised local cable TV phone-in show with Gordon Edwards.

1979 Atikokan

In July of 1979, peaceful demonstration at drill site by 75-100 Atikokan and other NW Ontario residents, to protest fact that petitions, totaling 20,000 signatures, asking that public hearings and a referendum precede test drilling, had been ignored.

For a more detailed history of these events see report prepared by Graham Saunders and Peter Lang of the CCSNW in 1979.

March 28 Three Mile Island, Pennsylvania – worst civilian nuclear accident in U.S history.

1979 The Select Committee on Ontario Hydro Affairs releases final report on the Management of Nuclear Fuel Waste. Meetings of the Committee included public meetings in Atikokan and Thunder Bay (January 1980). Presentations were made to the Select Committee by numerous organizations including CCNR and CCSNW. Graham Saunders, spokesperson for CCSNW also presented to the committee at Queen’s Park in Toronto, on February 5, 1980.

The late 70’s were busy ... and in the 80’s - some regrouping

1980 Joint Statement between Government of Canada and Ontario to establish that disposal site selection would not begin until a full federal public hearing and approval of the concept by both governments.

1988 Federal minister of Energy, Mines and Resources referred the AECL concept along with a broad range of nuclear fuel waste management issues, for public review.

Atomic Energy of Canada Limited (AECL) Concept: Geological Disposal in Plutonic Rock

- Waste: nuclear power reactor spent fuel or high-level waste from reprocessing
- Waste placed in containers to last at least 500 years (or longer, up to one million years)
- Containers placed in rooms 500 to 1000 metres below the surface in plutonic rock in the Canadian Shield
- Each container surrounded by a buffer (clay-based) which minimizes ground water movement, container corrosion and mechanical movement and contaminant dissolution and movement
- Each room sealed with back-fill (clay or cement-based)
- Vault sealed
- All tunnels and shafts sealed

1989 The federal minister of the Environment appointed an Environment Assessment Panel (“The Seaborn Panel”) to conduct the review of AECL Concept. There were eight members on the panel and the chairman was Blair Seaborn.

Their mandate was unusual because they were asked to:

1. review a concept rather than a specific project at a specific site;
2. review a proposal for which the implementing agency was not identified;
3. establish a Scientific Review Group (SRG) to examine safety and scientific acceptability;
4. review a broad range of policy issues; and
5. conduct the review in five provinces.

The panel took nearly ten years to conduct the review and their report was published in 1998. They visited communities across the country. Only visits to Northwestern Ontario are detailed.

1990's - the Seaborn Panel years

- 1990 June 14, Thunder Bay – Seaborn Panel conducts Open House
 October 29, Thunder Bay – Seaborn Panel conducts Scoping Meeting
- 1991 March 6, Thunder Bay – Seaborn Panel conducts workshop on Aboriginal issues
- 1995 January 19 Thunder Bay – Seaborn Panel conducts another Open House
- 1995 October 6 The Conclusions of the Scientific Review Group released – 278 page report

The 15-member Scientific Review group (SRG) was chaired by Raymond Price. They agreed that Canada needs an acceptable technology for the disposal of nuclear fuel waste and that geological disposal in plutonic rocks of the Canadian Shield is the preferred waste disposal option for Canada.

The SRG disagreed with AECL's conclusion that the "methodology to evaluate the safety of a disposal system against established safety criteria, guidelines and standards has been developed and demonstrated to the extent reasonably achievable in a generic research program". The SRG report listed almost 100 critical deficiencies in the AECL disposal concept. Most problems arose in the reliability of the post closure performance assessment results. The analysis was too site specific and has not been demonstrated to be applicable to various other potential nuclear fuel waste repository sites in the Canadian Shield. There are problems with unclear objectives, with methods of analysis and in the validity of the results of the reference case study.

However, the SRG concluded that, "in principle, an integrated system of engineered barriers could be designed and constructed and a site with suitable natural barriers could be selected to provide an acceptable disposal system that will contain and isolate the nuclear fuel waste effectively and safely for a minimum of 10,000 years."

"The SRG confirms and reiterates its conclusion that AECL's multiple-barrier concept for the disposal of Canada's nuclear fuel waste is potentially acceptable and applicable, but this needs to be demonstrated for each individual site. Therefore the site selection process should begin."

- 1996 Public Hearings began in March. Numerous written and oral submissions were made to the Panel.
- January 29 Thunder Bay – Hearings
 Oral Submissions by Atomic Energy of Canada, by Environment North, by the United Church of Canada, Cambrian Presbytery and by 11 individuals
- January 30 Ginoogaming First Nation, Long Lac - Hearings
 Oral Submissions by Atomic Energy of Canada, and by 24 individuals.
- January 31 Atikokan - Hearings
 Oral Submissions by Atomic Energy of Canada and by five individuals.
- 1997 People for Nuclear Responsibility (formerly the CCSNW) requested following question added to the November 10 plebiscite. Are you in favour of nuclear waste disposal in the Thunder Bay area? Over 95% responded "No".
- 1998 In February, the Seaborn Panel released their report (174 pages)

Key Panel Conclusions on the Safety and Acceptability of the AECL disposal concept

- From a technical perspective, safety of the AECL concept has been on balance adequately demonstrated for a conceptual stage of development, but from a social perspective, it has not.
- As it stands, the AECL concept for deep geological disposal has not been demonstrated to have broad public support. The concept in its current form does not have the required level of acceptability to be adopted as Canada's approach for managing nuclear fuel wastes.

Panel Recommendations:

- The federal government should create a nuclear fuel waste management agency (NFWMA) at arm's length from the utilities and AECL, with the sole purpose of managing and co0ordinating the full range of activities relating to the long-term management of nuclear fuel wastes.
- Funded by producers and owners of nuclear fuel wastes
- Board of directors, appointed by the federal government be representative of key stake holders (federal and provincial governments, electrical utilities and the engineering, science and social science communities)
- Have a strong and active advisory council representative of a wide variety of interested parties (engineering, science, health and social sciences, Aboriginal people, worker; environment and other non-governmental organizations; ethical and religious groups concerned Canadians; host and affected communities once identified; and international bodies)
- and nine other recommendations.

1998 In December the Government of Canada issues a Response to the Recommendations of the Seaborn Panel:

Government of Canada agrees with recommendations, but only in part.

In particular the nuclear fuel waste management organization will be created but be established by the producers and owners of nuclear fuel wastes (specifically not at arm's length from the utilities). In theory, this approach was adopted by the government in order to facilitate cooperation among producers and owners to find a solution that is safe and environmentally sound as well as being comprehensive, cost-effective and integrated.

[And in the new millennium...](#)

2002 Nuclear Fuel Waste Act came into force in 2002. The key element of the act include

- requiring the major owners of nuclear fuel waste to establish a waste management organization to carry out the managerial, financial and operational activities to implement the long-term management of nuclear fuel waste
- requiring the major owners of nuclear fuel waste to establish trust funds and to make annual payments into those trust funds to finance the long-term management of nuclear fuel waste and
- authorizing the Governor in Council to make a decision on the choice of approach for long-term management of nuclear fuel waste for Canada to be implemented by the WMO.
- require that the waste management organization carry out public consultations, the studies and reports are submitted to the Minister of Natural Resources and are make public , that an Advisory Council is established

2002 Nuclear Waste Management Organization (NWMO) formed. They have engaged in numerous public consultations (although not well publicized and citizens panels are randomly selected) and released numerous reports and the main reports are listed below.

Asking the right questions - 2003

Understanding the Choices - 2004

Choosing a Way Forward – 2005 “Adaptive Phased Management”

2007 The Federal Government of Canada approved the plan for the long-term management of used nuclear fuel called “Adaptive Phased Management”.

Key attributes of Adaptive Phased Management are:

- ultimate centralized containment and isolation of used nuclear fuel in an appropriate geological formation
- phased and adaptive decision-making
- optional shallow storage at the central site prior to placement in the repository
- continuous monitoring
- provision for retrievability
- citizen engagement

2009 Ignace Town Council connects with NWMO – exploring possibilities of becoming a nuclear waste host community,

2010 NWMO to release Site Selection Process document