

1995

**REPORT ON THE HIGH-LEVEL
RADIOACTIVE WASTE ACTIVITIES
CONDUCTED UNDER
MINNESOTA STATUTES 116C.712**

June 30, 1995

**MINNESOTA OFFICE OF STRATEGIC
AND LONG RANGE PLANNING
AND THE
MINNESOTA ENVIRONMENTAL QUALITY BOARD**

Report to the Legislative Commission on Waste Management

High-Level Radioactive Waste Activities Conducted Under Minnesota Statutes 116C.712

June, 1995

BACKGROUND

The High-level Radioactive Waste program was developed to ensure that the state is prepared to respond to high-level nuclear waste storage, transportation, and disposal policy issues in Minnesota. At the time the legislation was enacted, the U.S. Department of Energy (DOE) was looking at Minnesota as a potential host state for a geologic high-level waste repository, which the state opposed. The statute specified that the State Planning Agency (now Office of Strategic and Long Range Planning) was responsible for this work. The U.S. Congress acted to remove Minnesota from consideration in 1987, when the Nuclear Waste Policy Amendments Act was passed. The Minnesota statutory language was subsequently changed to focus on monitoring of the federal program.

The assessment is for reimbursement of actual state-incurred expenses. As Northern States Power Company is the only nuclear utility in the state, it has been responsible for all payments under this assessment. The assessment terminates when the Department of Energy begins construction of a high-level waste disposal site in another state.

High-level waste includes spent nuclear fuel from commercial power reactors, special fuel from test or research reactors, and wastes generated by the reprocessing of these fuels. Currently, Minnesota generates only waste in the first category. Low-level radioactive waste is any waste which is not high-level by definition. Low-level waste is not monitored by this program.

Program Organization

Monitoring Activities

State Nuclear Issues and Programs

Current Status

PI

NSP Planning

Legislative Task Force

Waste Generation and Management in Minnesota

**Federal Programs and Initiatives
Coalition**

USDOE

**Repository
Interim storage
MPC**

**NRC
EPA**

DOT- map

National Legislation

Regional Nuclear Waste Planning

The Council of State Government's Midwestern High-Level Radioactive Waste Transportation Project has kept Midwestern state officials informed of developments within the federal Civilian Radioactive Waste Management System since 1989. Funded by a cooperative agreement with the U.S. DOE, the project is directed by a committee comprised of midwest state officials. Mr. John Kerr of the Division of Emergency Management, Minnesota Department of Public Safety, represents Minnesota on the committee. He coordinates the indirect participation in committee activities with the Minnesota Departments of Public Service, Health and Transportation, and the EQB. The CSG also publishes several reports yearly which are generally very helpful to the states. The project convened the first joint meeting of all four of the regional rad waste transportation committees in April, 1995, with the objective of addressing common concerns associated with rad waste transportation. Despite the differences stemming from geography and reliance on nuclear power, the regions identified three primary common concerns: the full-scale testing of shipping containers, emergency preparedness for accidents, and the routing of shipments. The discussion emphasized that, because state and local emergency response teams will be responsible for first response to accident events, DOE funding for proper training must be adequate and available well in advance of shipments.

The following chart provided by the CSG shows regional spent fuel storage.

CHART

Minnesota's participation in the CSG's regional committee allows the state agencies to anticipate responsibilities associated with future transportation of nuclear waste, as well as the opportunity to assist in development of federal programs.

Foreign Nuclear Waste Programs

Canada

We have monitored development of Canada's strategy for high level nuclear waste disposal for a number of reasons which are discussed at the end of this section.

The Canadian government agency responsible for research and development of a disposal facility is Atomic Energy of Canada Limited (AECL). Their proposed disposal concept design includes sealing of waste in long-lasting (500 years) containers, emplacing the containers in a disposal vault excavated to a nominal depth of 500 to 1000 meters in intrusive igneous (plutonic) rock of the Canadian Shield, surrounding the containers with a sealing material, and then eventually sealing all openings. Disposal technologies include a range of options to provide adaptability to physical conditions of the yet undetermined site location, and to allow for changes in criteria and standards.

The concept anticipates an construction and operating schedule of 89 years, including an initial 20 years for identifying a host site.

In late 1994, the AECL released an Environmental Impact Statement on the Concept for Disposal of Canada's Nuclear Fuel Waste, and will conduct public hearings before there is a commitment to the proposed concept. A siting phase would begin after a concept is approved. A copy of the separate EIS Summary has been sent to the Legislative Reference Library. The EQB has several extra copies for requests.

The map below is from the EIS and exhibits the geographic range of the Canadian Shield which will be the search area for a disposal facility.

Map

Geologic field investigations have concentrated on the Canadian Shield in Ontario and southeastern Manitoba.

Two aspects of the Canadian disposal concept are of potential interest to Minnesota. Though the Canadian Shield (crystalline rock) search area covers much of Canada, it does extend to Minnesota's border in Manitoba and Ontario, so that sites adjacent to the Minnesota border could conceivably be considered. Much of the research and development on disposal has been conducted at two national laboratories, one of which is the Whiteshell Laboratories southeast of Winnipeg, approximately 45 miles from Minnesota's northern border with Manitoba. The Whiteshell Laboratories include the Underground Research Laboratory, which was constructed to provide a representative environment in which to conduct large-scale underground. The AECL emphasizes that the Whiteshell facility has not been investigated as a potential site. An additional field research area is at Atikokan, Ontario, approximately 35 miles north of Minnesota's northern border and the Boundary Waters Canoe Area.

A second potential consideration is that the crystalline rock being investigated by the

Canadian government extends through the northern half of Minnesota. The U.S DOE has no active program formally evaluating geologic formations in Minnesota, or anywhere else other than Yucca Mountain, for potential use for a repository site. It is likely that the U.S. will need a second repository at some point in the future, and the DOE has maintained an active funding and information sharing relationship with the Canadian disposal research and development program. While there is no public information basis for anticipating that the U.S. government will again look to Minnesota as a potential repository host, the state should continue to monitor the DOE\AECL relationship and the Canadian waste disposal program.

Summary of Other Countries' Programs

Among numerous sources of information about nuclear waste programs in other countries, an August, 1994, report of the U.S. General Accounting Office is an excellent compilation and comparative analysis. The report's summary has been included as Appendix ?. It is very useful in addressing the international context of this difficult governmental responsibility.

Information Resources

A primary current events resource used in monitoring the federal and industry waste management programs is a subscription (\$737) to the biweekly Nuclear Waste News.

Many other resources are available in many formats. The EQB receives hardcopy nuclear-related reports published by the NRC, DOE, EPA, U.S. General Accounting Office, and U.S. Office of Management and Budget, and orders reports available from industry, academic and public interest groups. Reflecting the broad public interest in the nuclear waste issue, regular articles in the print media are reviewed.

A very significant information resource has developed over the past year through the Internet system. While much of the information on nuclear issues still must be accessed in conventional hardcopy procurement modes, Internet effectiveness is rapidly developing. It is available at the Legislative Reference Library. Appendix ? is a sample printout of energy links, with nuclear-related links highlighted. A second listing is the menu from a useful nuclear-specific link.

Meetings Attended

DOE Public EIS Scoping Meeting on the Multi-Purpose Canister Concept, Chicago, IL, November, 1994

Nuclear Waste Transportation and the Role of the Public, Las Vegas, NV, Jan. 1995.

Exchange Decisionmakers' Summit: U.S. Civilian Radwaste Management, Lansdowne, VA, February, 1995

Joint Meeting of the Regional Radioactive Waste Transportation Committees, Chicago, IL, April, 1995

PROGRAM ACCOUNTING

Past Years	1992	\$ 39,916
	1993	\$ 43,061
	1994	\$ 41,668
Current Year 1995 (to 5/30/95)		\$,

The current appropriation is \$42,000 per year. Northern States Power Company is assessed quarterly based on the total projected expenditure, with the final assessment adjusted to cover actual total costs for the year. Expenditures primarily fund partial salary of one professional staff. Additional expenses include a subscription to a national newsletter, travel to meetings and conferences, partial support staff salary, and overhead costs.